MIDWEST MARKETING ISSUE
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1958 Soil Bank Poses Puzzler for Pesticide, Plant Food Industries

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—Soil bank activities for 1958 crops pose a complex problem for the plant food and pesticide industry. This condition is created by the terms and conditions of the soil bank administrative techniques for the crop year since the bank now imposes a cross-compliance between crops under its basic acreage provision.

One point seems clear, however, and that is that the acreage reserve program for 1958 will not permit substitution of other field crops on acreage which has been committed to soil bank participation.

For 1958 the soil bank will require participants who produce basic crops—wheat, corn, cotton, peanuts, tobacco and rice—to comply with acreage allotments on all of these crops if they commit any to an acreage reserve program.

Next, a soil bank acreage reserve program participant will not be permitted to plant land taken out of production for the soil bank with any other field crop in 1958. This provision includes other basic commodities and also non-basic crops such as oats, rye, barley and grain sorghums.

Further, a farmer participating in the acreage reserve program of the soil bank in 1958 will not be permitted to plant a farm acreage in excess of his planted acreage for his farm in 1957 for all field crops. However, he may in the case of his non-basic allotment crops such as the small grains and oilseed change his production pattern and use the balance of his land for all or any one of these crops or alter his 1957 planting pattern as long as he remains within the 1957 planted acreage pattern.

How this will alter the production

(Continued on page 8)

Canada Potash May Trim U.S. Output, PCA President Says

CARLSBAD, N.M.—Potash production in New Mexico may decline because of pressure from new Canadian deposits, predicts the president of a leading major potash producer here.

G. F. Coope, president of the Potash Company of America, said that at best Carlsbad could expect a leveling off in the development of potash operations.

He predicted that richer Canadian deposits, made more attractive by better tax and royalty structures, will gradually divert the industry away from the New Mexico potash fields.

Discussing his company's new Canadian fields, Mr. Coope said: "We propose to hoist 4,000 tons of ore a day, which is a good propor-

(Continued on page 5)

TVA Committee Expects Study To Continue

Members Now Acting as Individual Consultants Rather than as Group

AMES, IOWA—Following publication of its conclusions based on a ten-month survey of fertilizer activities of the Tennessee Valley Authority (Croplife, Jan. 6, page 1), the eleven-man committee which made the study will continue to make long-range suggestions to TVA, according to Dr. Earl O. Heady, Iowa State College

(Continued on page 4)

Nitrogen Conference Talks Put Stress on Plant Food Potentials in Middle West

By LAWRENCE A. LONG
Editor of Croplife

ST. PAUL, MINN.—An emphasis on the sales and marketing aspects of plant foods was made at the Minnesota Nitrogen Conference held at the Lowry Hotel, St. Paul Feb. 20-22. The registration of 400 at the meeting represented nitrogen manufacturers, dealers and salesmen, and a generous number of farmers from not only Minnesota but neighboring states as well. Speakers were chosen from industry, the University of Minnesota, and land grant colleges in other states.

Dr. Malcolm H. McVickar, agronomist for the California Spray-Chemical Corp., Richmond, Cal., told the group that the best sales tools for fertilizer include knowledge of the product and its performance. "It's time we sold results, or profits, rather than mere pounds of nitrogen," he declared at the opening session.

Announcing that he wanted to "bang home" the points of his talk, Dr. McVickar used a blank-firing pistol to emphasize each portion of his talk.

"The old and still-used approach of cost per ton or pound of fertilizer must give way to stress on the farmer's return on investment," Dr. McVickar declared. He stressed the need to make "yield per acre and cost per ton of fertilizer secondary to return

(Continued on page 24)

Super Shipments Show Gain in 1957

WASHINGTON—Production of superphosphate and other phosphatic fertilizers totaled 2,428,183 short tons during 1957, the Bureau of the Census has reported. Shipments last year amounted to 1,799,091 short tons, for a gain of 6% over those during 1956.

Included in the production figure for 1957 were 1,374,263 short tons of normal and enriched, a decline of 7% from 1956; 830,500 short tons of concentrated, an increase of 10%; and 223,420 short tons of other phosphatic fertilizers, a gain of 9%.

Shipments in 1957 included 761,071 short tons of normal and enriched, down 5% from 1956; 819,275 short tons of concentrated, up 14%; and 218,735 short tons of other phosphatic fertilizers, up 21%.

New Formulating Plant Under Way for Niagara in South

GREENVILLE, MISS.—A new pesticide formulation plant is under construction here, with production scheduled to begin about April 1. The new facility is owned by Niagara Chemical Div., Food Machinery and Chemical Corp. of Middleport, N.Y., whose products have been known for many years in the mid-south cotton belt.

The new plant at Greenville will produce chlorinated hydrocarbon and organo-phosphate dusts and emulsifiable pesticides as well as certain herbicides. In addition, Niagara will formulate a number of wholly new pesticides from the company's research. Ethion (Niagara 1240), Thiodan, Tedion and other new products now entering the market are expected to maintain the firm's prominent position among plantation suppliers, a company spokesman said.

Horace W. Lee, Tallulah, La., is the regional manager in charge of operations, and D. A. Whitfield, Greenville, Miss., is sales manager for the area.

The Niagara Chemical Div., with headquarters at Middleport, N.Y., has been in business since 1904. The company's calcium arsenate for boll weevil control was used widely in the Delta from 1919 until it was largely replaced by organic insecticides. The company

(Continued on page 25)

Iowa Firm Builds New Fertilizer Plant

KEOTA, IOWA—Ke-Wash Fertilizer Co. has constructed a new continuous TVA ammoniator dry fertilizer plant with capacity of between 12 and 15 tons an hour here. Floor space of the plant is 20,000 sq. ft., and there are storage facilities for 6,000 tons.

Howard Greiner, who has been in the fertilizer business four years, is president and sole-owner of Ke-Wash. The firm will supply dealers in southeastern Iowa.

Inside You'll Find

NEMATODE LOSSES total nearly $1 billion to crops throughout the country, according to scientists speaking at Shell Nematology Workshop at Toledo ... Page 2

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Nematode Loss Near $1 Billion, Ohio Seminar Told

TOLEDO—Nematodes cause widespread damage to the 52 million dollar vegetable industry in Ohio and Michigan, a group of scientists said at a nematode seminar held here recently.

One of the scientists estimated that the parasites ruin several million dollars' worth of the state's vegetable crops each year. Nationally, he said, the parasites are responsible for annual losses of close to one billion dollars.

Dr. J. D. Wilson, professor of plant pathology at the Ohio State Agricultural Experiment Station in Wooster, said the parasites attack numerous vegetable crops, including radishes, onions, carrots, lettuce, potatoes and celery. They also damage flowers, orchards and ornamentals, he said.

Speaking on the opening day of a two-day nematology seminar sponsored by the Shell Chemical Corp. at the Holiday Inn Hotel, Dr. Wilson said soil fumigation has been used successfully to fight the pests. He said the Ohio State Agricultural Experiment Station in Wooster is now conducting extensive tests to determine the best methods for eradication of the parasites.

Although a detailed survey of nematode infestation in Ohio has not yet been made, Dr. Wilson said, at least six parasitic species are known to exist in the state. Tests aimed at determining the effect of crop rotation on nematode infestation are now being carried out at the Wooster Experiment Station, Dr. Wilson said. Test crops include radishes, onions, carrots, lettuce, potatoes and celery.

Dr. G. Thorne, professor of plant pathology and zoology at the University of Wisconsin, told an audience of farmers and growers that nematodes injure plants by attacking their roots. Working both inside and outside the roots, the pests pierce healthy cells with a syringe-like beak and suck out vital plant juices. The infested plants wither, and crop yields are drastically reduced.

Nematodes have damaged American crops since early colonial days, Dr. Thorne said, but the extent of nematode infestations in present-day crops has been recognized only recently. Minute in size—most parasitic species are about as big as a grain of salt—the pests are rarely seen with the naked eye. They more than make up for their lack in size, however, by attacking susceptible crops by the billions.

Dr. J. A. Knierim, nematologist of Michigan State University in East Lansing, another of the scientists, reported that nematodes have caused widespread damage in Michigan by attacking such crops as strawberries, nursery stock, sugar beets and many vegetables. He said one species alone, the "root-knot nematode," was responsible for much damage to carrots and celery.

Dr. Knierim said root-knot nematodes often cause considerable monetary loss. Carrots, he said, are deformed and reduced in grade by root-knot nematode infestation. These nematodes also retard the growth of celery. Although infested plants grown in moist soil often develop to marketable size, tonnage yield per acre is invariably reduced, Dr. Knierim said. He noted that certain types of nematodes are particularly feared in strawberry plantations because they open up avenues of attack to organisms associated with the dreaded strawberry root rot.

The use of soil fumigants in combating nematodes was described by J. T. Sturgis, manager of Sturgis Growers, Inc., of Snow Hill, Md.

Monsanto Chemical To Purchase Two Australian Companies

ST. LOUIS — Monsanto Chemicals (Australia) Ltd. has entered into an agreement with Drug Houses of Australia, Melbourne, to purchase all outstanding shares of two of that company's subsidiaries, Marshall E. Young, vice president of Monsanto Chemical Co. here and general manager of the company's overseas division, has announced.

The two companies being acquired from Drug Houses of Australia are Beetle Elliott Pty., Ltd. and D. H. A. (Chemicals) Pty., Ltd. Beetle Elliott manufactures plastic materials, principally phenolic, urea and melamine molding powders, as well as polyvinyl acetate emulsions. D. H. A. (Chemicals) manufactures sulfuric acid, phenothiazine, some inorganic salts and various agricultural chemicals.

Both companies operate plants in the Sydney and Melbourne areas. The principal shareowners of Monsanto Chemicals (Australia) Ltd. are Monsanto Chemicals Ltd. (England) and Monsanto Chemical Co. of St. Louis.

CSC Sales Reach New Record During 1957

NEW YORK—Commercial Solvents Corp. reports for the year ended Dec. 31, 1957, consolidated net earnings of $1,449,638, equal to $.53 per share on 2,741,422 shares of common stock, after a net charge of $.27 per share resulting from application of income from Northwest Nitro-Chemicals Ltd. to the corporation's investment therein. This compares with $2,974,960, or $1.09 per share in 1956, after extraordinary net charge of 12¢ per share.

Sales for the year reached an all time high level amounting to $65,931,804, compared with $62,579,560 for the previous year. Earnings were adversely affected by the expense of starting up four major new production units during the year and by extremely competitive market conditions which prevented increases in selling prices to offset rising costs, CSC said.

The expansion of production capacity in ammonium nitrate, synthetic methanol from natural gas and methylamines from the company's basic ammonia and methanol, plus an extended start-up period for the new Canadian plant of Northwest Nitro-Chemicals Ltd., contributed to increased costs and drew heavily on the company's technical resources, the firm said. By year end these plants were in satisfactory operation.

PROCEEDINGS AVAILABLE

WASHINGTON—The Manufacturing Chemists' Assn. has published proceedings of its 1957 Conference on Precautionary Labeling. The 52-page book includes complete papers presented at the conference and a list of the 225 government, industry and publications' representatives who attended. Copies are available at $1 each from the Manufacturing Chemists' Assn., Inc., 1625 Eye St., N.W., Washington 6, D.C.

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INSECT AND PLANT DISEASE NOTES

South Dakota May Have Many Corn Borers in '58

BROOKINGS, S.D.—Central South Dakota farmers who had the lowest corn borer infestations in the state in 1956 (12 per 100 plants) had 36 times as many corn borers to contend with in 1957. According to John Lofgren, entomologist with the agricultural extension service at South Dakota State College, the 1957 survey indicates an average infestation of 340 borers per 100 plants—the most severe infestation in South Dakota since 1954.

Mr. Lofgren said that surveys last fall indicated that commercial corn area farmers took a loss of about 10% of their corn crop.

The entomologist stated that these figures bear out the popular theory that a good corn year is also a good year for corn borers. They also indicate how easy it is for borers to "bounce back" from the low infestations experienced in 1956. "If conditions look favorable for a good corn year in 1958, farmers should prepare to combat corn borers," he said.

Many Grasshoppers Expected in Nebraska

LINCOLN, NEB.—Barring adverse weather conditions this spring, grasshopper numbers similar to those of 1957 may be expected in Nebraska this year, according to Jerry Bell, USDA entomologist at the college of agriculture.

He said that surveys conducted last summer and fall indicate a "very high percentage" of grasshoppers' matured and deposited eggs in the soil. Weather conditions last fall gave the grasshoppers ample time to deposit a maximum number of eggs in the soil.

The main grasshopper problems in 1958 are expected to be in central and eastern Nebraska. However, if weather conditions are favorable—warm and dry—grasshoppers may move about. Reports from northeast Colorado and eastern Wyoming indicate heavy grasshopper infestations which could move into western areas of Nebraska during the growing season.

At the peak of populations in Nebraska last year, there were approximately six million acres of crop land infested with grasshoppers averaging eight or more per yard in the field, Mr. Bell stated.

Populations in field margins were 20 or more to the yard and ready to move into the fields. In the range areas of the state, an estimated 355,000 acres were infested with grasshopper populations of eight or more per yard.

Leaf Rust Threatens Oat Fields in Texas

COLLEGE STATION, TEXAS—Leaf rust on oats is described by Harlan Smith, extension plant pathologist, as bad in the area from Goliad and Victoria south into the Lower Rio Grande Valley and westward to La Salle County.

Mr. Smith visited the area and said one county agent pretty well summed up the situation when he said, "We may have to stop growing small grain in South Texas . . . in dry years we can't get it up and in wet years the rust gets it."

Unfortunately, Mr. Smith said, there are no oat varieties now available for planting which are resistant to leaf rust. Plant breeders are working on the problem but progress has been slow since new strains of rust are continually showing up.

Mr. Smith reported that the disease is overwintering as far north as the Temple area. This, he said, is significant for it means the spores are much farther north at this time than normally and, under favorable conditions, the rust may infest small grain in North Texas earlier than usual.

Severe losses from the disease during 1958 could have far-reaching effects on farm management practices in the hardest hit areas, Mr. Smith said. Farmers and stockmen may be forced to change their cropping plans to include substitute crops for small grains.

Information on Livestock Sprays Presented at Glenn Chemical Conference

CHICAGO—A round-up of information on livestock sprays was presented at the Livestock Spray Conference, held at the Sheraton Hotel here Feb. 21. Special attention was given to Tabutrex, a new insect repellent. The meeting was sponsored by the Glenn Chemical Co., Chicago. Several industry members and agricultural college representatives participated in the program.

In addition to demonstrations of Tabutrex, unpublished material on the reaction between Tabutrex and insecticide sprays was presented by Z. Z. Dworkin, Glenn Chemical. Charts and the results of laboratory experiments indicated that the new repellent, used in combination with accepted livestock spray ingredients, increases both the knockdown and the repellent effect.

The meeting was opened by Joe Abrams, president of Glenn Chemical. He was followed by Dr. W. N. Bruce, Illinois Natural History Survey, Urbana, Ill., who demonstrated the repellency of Tabutrex and a comparison of various formulations.

A panel on sprays generally agreed that repellency is an advantage, stock sprays are better today than older types, that farmers and dairymen have much to gain in the use of repellents, farmers need education to the value of sprays and that it is desirable to combine repellents and killing sprays.

The panel was made up of A. G. Grady, Sinclair Chemicals; Dr. Bruce; Dr. L. E. Swanson, University of Florida; Dr. L. Cutkomp, University of Minnesota; and Dr. E. J. Campau, Standard Oil Company of Indiana.

Other material demonstrated more beef and milk can be gained by reducing the number of insects, and Glenn Chemical representatives said the total market for cattle sprays can be expanded with the use of Tabutrex.

Oregon's Most Important Pests Enumerated

SALEM, ORE.—The ten most important crop and forest insect pests in Oregon in 1957 and the ten most important insects to "man, animal and household" have been named by Joe Capizzi, survey entomologist with the state department of agriculture. No attempt was made to rate the pests in order of importance.

The Hessian fly and balsam woolly aphid replace the alfalfa weevil and the mountain pine weevil which appeared on the 1956 "most important pest" list.

The crop and forest list includes:

1. Aphids—These are probably the most important of the plant pests.

2. Mites—Like the aphids, mites are prolific and persistent.

3. Symphyllids — These pests are becoming increasingly important on truck and field crops wherever grown in Oregon. Control measures are expensive and erratic.

4. Western cherry fruit fly—This is an insect that causes little actual damage to the $5½ million commercial cherry crop when proper controls are applied. But each grower must apply control measures to protect his crop.

5 and 6. Codling moth and pear psylla—Without continued control practices against these pests, commercial production of fruit (particularly apples and pears) would be impossible.

7. Onion maggot—In 1957, of Malheur County's 2,600 acres of onions, an estimated 15-20% of the crop was lost to this maggot. The Malheur 1957 onion crop is valued at $1,685,000. In other onion areas control practices were effective but some losses occurred.

8. Hessian fly—The worst outbreak in the Willamette valley in 30 years occurred affecting spring wheat and barley. Conservatice damage was estimated at $500,000.

9. Balsam woolly aphid—This pest continues to increase in importance. Epidemic infestations total 385,200 acres of subalpine fir standing mostly in the Willamette National Forest. No satisfactory control measures are known.

10. Spruce budworm—A total of 830,960 acres of epidemic infestations were recorded in Oregon in 1957; 812,000 acres in and adjacent to the central Blue Mountains were recommended for control treatment during 1958.

Mr. Capizzi's list of insects most important to man, animal and household remains unchanged from the 1956 top ten. They are cattle grubs, mosquitoes, earwigs, houseflies, termites, carpet beetles, roaches, sheep ked, northern fowl mite and cattle lice.

TVA

(Continued from page 1)

agricultural economist who headed the committee.

However, most of the recommendations being made at present to TVA are offered on an individual basis by committee members rather than by the whole group acting as a unit. Because of the different character of current study, Dr. Heady states that it is not necessary to have a chairman for this committee activity, but he will remain active as chairman in

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the continuing long-run recommendations for TVA.

In an interview with Croplife last week, he said that the committee expects to work on long-range plans and suggestions for TVA with the object of increasing the effectiveness of its program of fertilizer manufacture, demonstration and education as well as other aspects of its agricultural program.

"In making its survey and in presenting the subsequent report, the committee tried at all times to maintain complete objectivity and to avoid any emotionalism," he said. "This policy will be continued as further studies are made," he added.

Individual recommendations to TVA will soon be completed, it was pointed out by the Iowa State agricultural economist, and after that, the committee will resume its functions as a unit with Dr. Heady in the position of integrating chairman as continuing long-range recommendations are made.

The committee, selected by TVA to make the survey, was commendatory regarding some aspects of the agency's activities, and critical of others. In the latter category, the group made a number of points wherein corrections needed to be made. These points included suggestions that a better definition of the educational uses of TVA fertilizer materials should be made; that these activities should be evaluated on the basis of educational need without regard to plant capacity; that the pricing policy should be in keeping with the educational objectives of the program, and that the distribution areas should be extended to lessen the concentration in certain localities.

It was also noted that more exact upper limits should be established for the quantity of materials distributed to individual farmers; that limits should be established for the length of time for which a given material should be included in the demonstration program and how long an individual farmer can obtain fertilizer for a particular use; and that TVA should not use fertilizers in its program that are inferior in quality to those commercially available to the farmer.

TVA took exception to some of these points and has indicated that some suggestions made by the committee cannot be adopted. The agency said that maintenance of production at a certain level to meet educational requirements fully, but no more, "is an extremely difficult task." It added that "there is also the desirability of maintaining a level of production which will result in no loss to the government."

The committee, in addition to Dr. Heady, included R. J. Jessen, professor of statistics, Iowa State College; W. R. Parks, professor of public administration, University of Wisconsin; M. D. Weldon, extension agronomist, University of Nebraska; J. C. Lowery, extension agronomist, Alabama Polytechnic Institute; M. B. Russell, head, agronomy department, University of Illinois; N. C. Brady, head, agronomy department, Cornell University; John Sims, consultant, Ohio Farm Bureau Cooperative Assn.; Arthur M. Smith, assistant to the vice president, plant food division, Olin Mathieson Chemical Corp.; Howard Parker, president, Sylacauga Fertilizer Co.; and Howard Thullbery, sales manager, Superior Fertilizer & Chemical Co.

THRIP STUDY

URBANA, ILL.—The first American study of little-known tubed thrips, smallest winged insect, has been published by the University of Illinois Press. Lewis J. Stannard, Jr., taxonomist of the Illinois Natural History Survey, is author of the technical work, "The Phylogeny and Classification of the North American Genera of the Suborder Tubulifera (Thysanoptera)."

POTASH

(Continued from page 1)

tion of what we are mining in Carlsbad.

"Since we cannot hope in the near future to increase our sales sufficiently to take care of this additional tonnage, we must contemplate an adjustment between Carlsbad and Canada, with some curtailment in the Carlsbad operation."

Most other potash companies also are involved in the new Saskatchewan fields, Mr. Coope said. He added: "So far as we are concerned we are hoping to start a Canadian operation by the first of the year."

Mr. Coope declined to predict how much or how soon Carlsbad will be directly affected.

"There is no abrupt change anticipated in the Carlsbad potash operation, but rather one which will be spread out over the years with the time involved being indeterminate and depending on unknown factors," he said.

He also said PCA went into the Canadian fields because "the deposit there is of better quality than anything we know of remaining in the Carlsbad area." Also the tax and royalty situation is attractive.

"At the present time we are heavily committed with shafts down about 2,700 feet and construction of the surface plant well under way," Mr. Coope said. "It would have to be a substantial producer as the economics of the situation does not permit a small scale operation."

Several major producers have reduced the work week here, giving excessive stocks of potash as the reason.

"Carlsbad has many other resources than potash," Mr. Coope said, "and these will play an important part when backed by community effort in future development."

Even with the planned curtailment, Mr. Coope added, Carlsbad might expect "a substantial, healthy and helpful industry operating in the Carlsbad area for many years" beyond the time production is cut back.

Charles L. Alexander Joins Benham Supply

ELKHART, IND.—Benham Supply Co. here has announced the appointment of Charles L. Alexander to its staff as sales and service representative.

Mr. Alexander has been with the botany and plant pathology department at Purdue, where he spent three years in research and teaching. He has degrees in plant pathology from New Mexico and Oklahoma, and has advanced training in plant diseases, weed control, seed treating and soil fumigation.

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California Reports Fertilizer Tonnage Drop at End of 1957

SACRAMENTO, CAL.—Use of fertilizer materials for the calendar year of 1957 increased slightly over 1956, despite a drop in tonnages during the fourth quarter of the year, the California State Department of Agriculture has reported.

Total fertilizer tonnages reported for the fourth quarter of 1957 came to 225,490 tons as compared to 231,361 tons for the same period of 1956.

Total tonnages for all of 1957 were 1,105,453 as compared to 1,052,124 tons for the calendar year of 1956.

Fourth quarter tonnages of ammonia solution were larger than any other single item, despite the considerable reduction in 1957's figure. It was 44,610 tons for 1957 as compared to 50,471 for the last quarter of 1956. Dry mixed fertilizers also experienced a drop. The 1957 tally for fertilizers in this category was 38,228 tons as compared to 42,750 tons the previous year.

Ammonium sulfate, on the other hand, experienced an increase in tonnage during the last quarter of 1957; 33,485 tons against 28,829 tons in the final quarter of 1956.

Normal superphosphate, also, did better in the last three months of 1957 than it did in the same period a year earlier. The respective figures were 16,639 tons and 14,777 tons.

Urea was also among the few staging an upturn. Its tonnage for the final three months of 1957 was 4,521 tons as compared to 3,798 tons during the last portion of 1956.

Not many grades of mixed fertilizers enjoyed an increase of tonnages during the final quarter of 1957 as compared to the same months of 1956. However, 14-14-7 registered 1,027 tons for the final quarter of 1957, whereas the corresponding time of 1956 found the tally at 929 tons. The figure for 16-20-0 likewise did better in the last portion of 1957. Its tonnage for the final three months of last year was 2,514, as compared to 1,269 tons during the same period of 1956.

According to Robert Z. Rollins, chief of the bureau of chemistry for California, the figures quoted in his report are subject to revision as delinquent reports are filed and subsequent audits may correct reports of individual companies.

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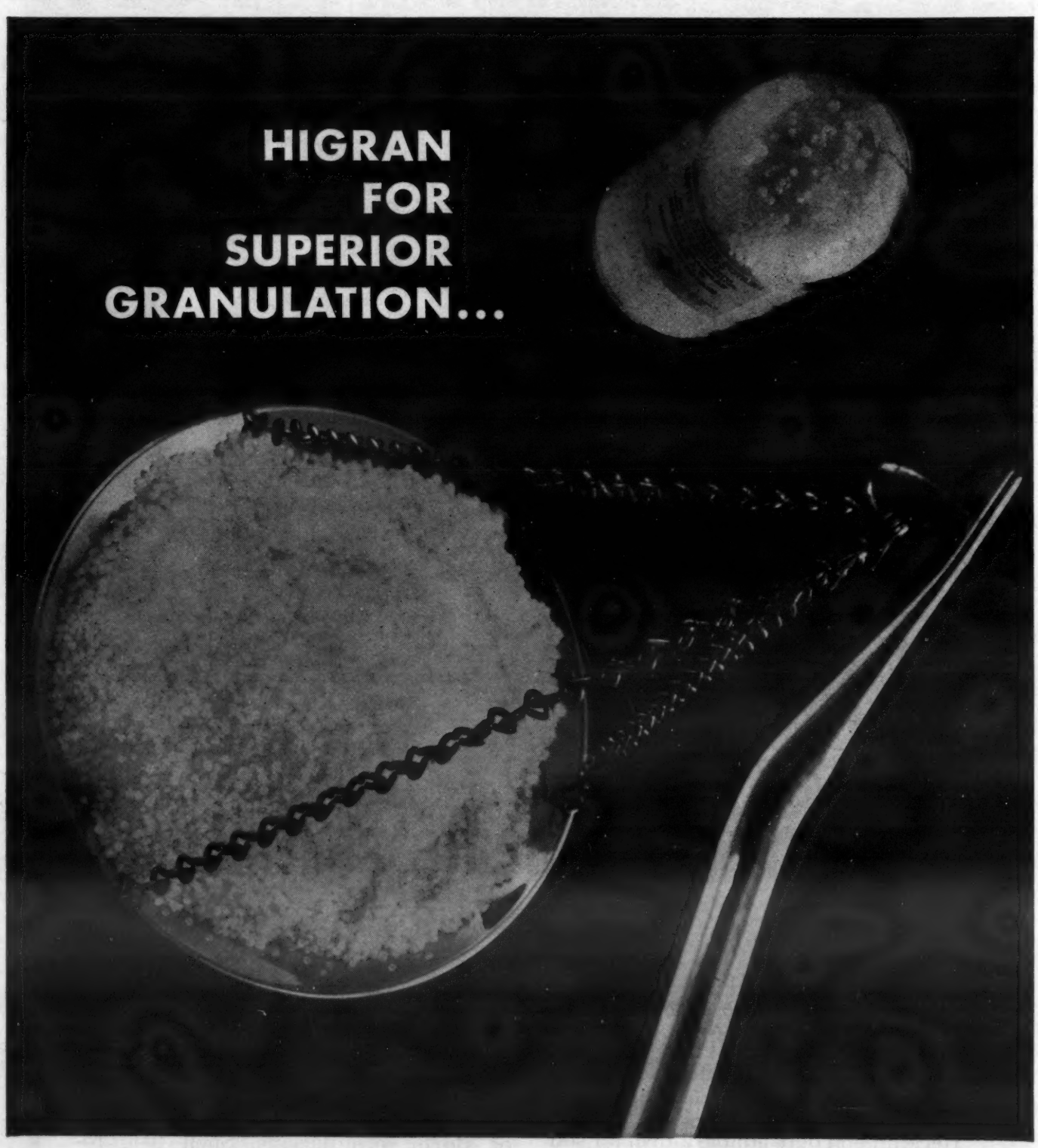

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Importance of Airplane To Agriculture Stressed At Mississippi Meeting

EDGEWATER PARK, MISS.—A two-day session highlighting the importance of the airplane in midsouth agriculture was held at the Edgewater Park Hotel here recently. Mabry Anderson, Mississippi Valley Aircraft, Clarksdale, Miss., president of the Mississippi Aerial Applicators Assn., presided at the opening meeting. All phases of aerial applicators' problems were discussed.

James Lanier of Chemagro Corp. and Dr. Petty of Louisiana State University Medical School presented papers on the use of organic phosphates and their hazards. An insect control panel was moderated by A. G. Bennett, extension entomologist of Mississippi Extension Service, and Dr. Marvin E. Merkl, entomologist, U.S. Department of Agriculture, Stoneville, Miss.

The proposals for the fire ant control program were discussed by W. R. Heard, USDA, Gulfport, Miss. The aerial applicators safety program panel was conducted by Frank Wignall, safety agent, and J. J. Werbke, agricultural specialist, both with the Civil Aeronautics Administration.

The state aviation program of the Mississippi Aeronautics Commission was discussed by Bud Moore of the Mississippi Aeronautics Commission, and insurance and legal problems in agricultural aviation were discussed by Harold Hansen, Far West General Agency, Washington State.

Retiring officers for 1957 are Mr. Anderson; Vic Sutter, Vic Sutter Dusting Service, Greenwood, Miss., vice president, and L. T. Wade, Jr., South Delta Aviation Service, Rolling Fork, Miss., secretary-treasurer.

The newly elected officers for 1958 are Cy Emery, Magnolia Aviation Service, Laurel, Miss., president; J. O. Dockery, Dockery Aviation Service, Clarksdale, Miss., vice president, and Ed Traweek, Valley Flying Service, Indianola, Miss., secretary-treasurer.

Agricultural Aircraft Group Holds Convention

FRESNO, CAL.—The 8th annual convention of the Agricultural Aircraft Assn. was a pronounced success, according to officials of the organization. Held in Bakersfield, Cal., the meeting attracted participants from 11 states besides the host state of California.

An innovation at this year's session was the introduction of short reports and panel type discussions rather than the extensive speeches that have marked such meetings in the past. Officials of the association hailed the success of the convention as marking the fact that the industry is growing up and stabilization is gradually taking place.

Among the companies displaying at the convention were several new ones including: Pacific Scientific Co., Vern's Wing Shop, Simpson & Whitney Aviation, Rawdon Brothers Aircraft, Inc., Service Air Co., Austin Aviation Supply and others.

New Experiment Station

PECOS, TEXAS—An agricultural experiment station for the Trans-Pecos area of West Texas is rapidly becoming a reality. Located in the heart of the cotton area where yields have reached the three-bales-per-acre mark, the station will work almost exclusively with cropping problems. These will include variety tests, fertilizers, plant diseases and other things peculiar to this area. A 160-acre tract of land donated by the Trans-Pecos Cotton Assn. is now being root-plowed and cleared for cultivation. A grant of $39,000 will be available July 1, at which time the construction of buildings and facilities will start. Heading the Pecos Station will be Dr. P. J. Lyerly, who is now superintendent of the Texas Agricultural Experiment Station at Ysleta, Texas.

Industry Patents and Trademarks

2,823,981

Method of Recovering Ammonia from Ammonium Chloride. Patent issued Feb. 18, 1958, to Charles H. Fuchsman, Corpus Christi, Texas, assignor to Columbia-Southern Chemical Corp., Allegheny County, Pa. A method of recovering ammonia from ammonium chloride which comprises passing a stream over magnesium oxide in contact with ammonium chloride at a temperature of 200 to 500° C. whereby to cause absorption of evolved HCl from the ammonium chloride and release of ammonia in vapor state, and withdrawing and condensing the resulting ammonia vapor-steam mixture whereby to produce an aqueous solution of ammonia, the amount of steam so passed over the magnesium oxide being in addition to any moisture generated by reaction in consequence of contact of magnesium oxide with ammonium chloride and being sufficient to establish a water vapor pressure over the magnesium oxide of at least 30 percent of the sum of partial pressures of water vapor and HCl in said atmosphere.

2,824,039

Fungicidal Composition. Patent issued Feb. 18, 1958, to Kenneth S. Karsten, Westport, Conn., assignor to R. T. Vanderbilt Co., Inc., New York. A dry powdered fungicidal composition comprising at least about 25% by weight of sodium pentachlorophenate and containing from about 0.5 to about 4% by weight of a highly aromatic hydrocarbon oil comprising methylated naphthalenes characterized by an unsulfonated residue not exceeding about 30% and an initial boiling point not less than about 350° F.

2,824,040

Fumigant Composition Comprising Petroleum Ether as a Flammability Depressant and Method of Preparing Same. Patent issued Feb. 18, 1958, to Edward J. Stanko, Mayfield Heights, and William J. Esselstyn, Painesville, Ohio, assignors to Diamond Alkali Co., Cleveland, Ohio. A fumigant composition consisting essentially of a mixture of carbon tetrachloride as a major constituent, a lesser amount of carbon disulfide, and minor amounts of sulfur dioxide and petroleum ether.

2,822,295

Rodent Repellent Cordage Impregnated with Dodecyl Alcohol. Patent issued Feb. 4, 1958, to John P. Barrett and Ervin W. Segebrecht, Chicago, assignors to Armour & Co., Chicago. Patent covers rodent-repellent cordage consisting of cordage impregnated with dodecyl alcohol.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of $25 must accompany each notice of opposition.

Bug Blast, in capital letters, for insecticides. Filed April 8, 1955, by Cenol Co., Inc., Chicago, Ill. First use May 1, 1948, or prior thereto.

Black Hawk, in hand-drawn letters and design of Indian head, for insecticides. Filed July 24, 1956, by Quinn Drug and Chemical Co., Greenwood, Miss. First use, 1943.

Design of simulated compass pointing out four directions and having the letters AMSCO in center, for hydrocarbon and chlorinated solvents, alcohols, esters, ketones, plasticizers, glycols, nitrogen derivatives, organic acids, anhydrides, aldehydes, and glycol ethers. Filed Dec. 27, 1956, by American Mineral Spirits Co., Chicago. First use April, 1936.

Thioneb, in capital letters, for agricultural fungicide. Filed April 5, 1957, by United States Rubber Co., New York. First use March 6, 1957.

FP, in capital letters, for compositions containing combined phosphorus and fluorine, namely, fluorophosphoric acids and fluorophosphates. First use July 15, 1948.

Diamond Black Leaf, in hand-drawn design featuring a black leaf with a red background. Filed June 13, 1957, by Diamond Black Leaf Co., Cleveland, Ohio, to Diamond Alkali Co., Cleveland, for pesticides, including insecticides, fungicides, rodenticides, algacides, parasiticides, nematocides, herbicides, and ovicides for agricultural, horticultural, household, and sanitary uses. First use Sept. 17, 1956, on rodenticides.

FumaSol, in hand-drawn capital letters, for rodenticide. Filed June 19, 1957, by American Chemical Paint Co., Ambler, Pa. First use April 25, 1957.

Phaltan, in capital letters, for agricultural fungicide. Filed July 17, 1957, by California Spray-Chemical Corp., Richmond, Cal. First use May 22, 1957.

Garden Joy, in hand-drawn script letters, for liquid fertilizer. Filed Jan. 14, 1957, By Bryan Chemical Co., Baltimore, Md. First use Dec. 1, 1956.

Elevator to Expand Fertilizer Business

GARDEN CITY, KANSAS—George Voth, manager of the Garden City Co-op elevator here, has announced that his firm will expand its commercial fertilizer business, along with expansion of its seed and milling plant and the building of elevator storage.

At present, ammonium nitrate will be moved from boxcars and trucks but plans call for a new warehouse to be built at Lowe, Kansas. This building, which will be of concrete, will be 140 feet by 32 feet and will hold 1,000 tons of fertilizer, Mr. Voth said.

California Moves Against Celery Mosaic Disease

SACRAMENTO—Following a public hearing at the request of celery growers in the Salinas Valley, the California department of agriculture has adopted regulations, effective Feb. 16, establishing a celery-free period and district to control western celery mosaic. The area of the district includes generally all of the Salinas Valley north of Greenfield.

The regulations prohibit the planting, growing and holding of celery plants in any state of cultivation or growth, other than seed or seedlings not showing above ground, in any place within the district during the month of January in any year, beginning in 1959.

The only exception applies to celery plants in experimental breeding plots, wherein the plants may be grown at any time, provided a permit is obtained from the Monterey County agricultural commissioner.

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SOIL BANK

(Continued from page 1)

outlook by crops for 1958 U.S. Department of Agriculture officials are unwilling to guess. They state, however, that in the case of wheat the device of by-passing the basic terms of the soil bank by putting normal summer fallow land into the soil bank or the planting of the substitute crop of grain sorghums cannot occur again this year.

Unusually wide interest in the acreage reserve program phase of the soil bank by cotton and corn farmers this year has surprised USDA and congressional leaders who have supported the soil bank operations from the start. Prior to the deadline for sign-ups in the soil bank for those crops it was evident that funds available fell far short of requirements if all applicants were to be financed.

On learning of this condition the House Appropriations Committee approved a supplementary appropriation for the soil bank which ultimately will provide an additional $225 million for those two crops in 1958. This measure was expected to clear the House floor last week, and the Senate was prepared to act promptly. The House Appropriations Committee action was given the blessing of the Senate through vigorous endorsement of Sen. Richard Russell (D., Ga.) who promised prompt action as soon as the House completed passage of its version.

This new money for cotton and corn for the soil bank this year will be divided approximately fifty-fifty on the basis of data now in USDA hands. It will involve removal from cultivation this crop year of upwards of seven million acres of corn land and more than five million acres of cotton.

It is observed here that this expected large reduction of these crops will stimulate a broad interest in all plant food ingredients and pesticidal chemicals in 1958 as farmers will attempt to gain maximum per unit production per acre from land retained in production.

Under the existing provisions of the Farm Law, corn acreage in the commercial corn belt will be limited to slightly more than 38 million acres, and a sizeable further cut for the soil bank of as much as seven million acres will lower commercial corn acreage to its lowest point.

However, Congress has not completed its consideration of the corn program. There are pending bills which would expand acreage allotments for 1958 for the commercial corn belt up to 56 million acres, a level seen necessary if adequate compliance with acreage allotments is to be obtained. Previously, USDA has advocated the removal of acreage allotments for the commercial corn belt and the grant of discretionary price support levels for the corn crop in the hands of the secretary of agriculture.

Appearing before the Senate Agriculture Committee recently Marvin McLain, assistant secretary of agriculture, said that unless some change was made in the corn acreage allotment pattern for the 1958 crop USDA would again invoke a low level of price support for all corn producers across the nation. Should that happen, the price support level for corn grown in the non-commercial corn belt would be supported at 70% of parity, which on the basis of present parity, would mean $1.21 bu.

That level, if retained by USDA administrative action, provides an attractive sales target for the plant food industry in the expanding corn acreage in the Southeast, where expansion of poultry production is growing rapidly, with the need for local grains to mix with feeding supplements.

For the pesticidal chemical industry it is also an attractive sales outlook since in much of the Southeast corn is a relatively new commercial crop, and farmers need instruction in the use of these important protective chemicals.

For cotton the sizeable probable soil bank cut in permissive acreage for the 1958 crop poses the need of farmers to get maximum output from land retained in production. Soil bank officials believe that most of the commitments of cotton land to the acreage reserve phase this year will come from relatively small farms. In any event the impending cut in cotton acreage is little short of a most important stimulant to cotton producers everywhere to produce a big and a quality crop.

Under the existing law the indicated cotton production from permitted acreage will barely turn out a crop adequate to equal domestic requirements and export demand. The latter item will probably again be stimulated by another extension of the Public Law 480 programs for at least another year. Furthermore, it is confidently expected that USDA will provide a cash subsidy for cotton for export starting the cotton crop year Aug. 1, 1958, which would assure that U.S. cotton exports will be competitive price-wise with other world producing areas.

RESERVE SIGN-UP

WASHINGTON — Farmers signed applications offering to put a little over 8 million "allotment" acres of upland cotton, spring wheat, corn, rice and eligible types of tobacco in the 1958 acreage reserve of the soil bank through Feb. 14, end of the fifth week of signup for spring-planted crops, according to preliminary reports received by the U.S. Department of Agriculture. By crops, and within fund allocations, farmers through Feb. 14 had applied for 3,079,389 acres of upland cotton, 3,829,843 acres of corn, 122,064 acres of rice, 74,290 acres of tobacco and 4,809,194 acres of wheat (including 3.9 million acres of winter wheat and 909,000 acres of spring wheat).

SUPPLY STORE OPENS

ST. FRANCIS, KANSAS — Goodell's Garden and Floral Shop, which handles fertilizer, has opened for business here. Velma Goodell, manager, said the establishment handles fertilizer, cut flowers, garden seeds, gardening service, bulbs and accessories. The firm also has a soil testing service and handles garden tools. Soil testing is done free of charge.

Cauliflower: left, boron treated; right, brown curd with boron deficiency
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State and Federal Statutes Outline Qualifications for Registration of Herbicides

By Jack Dreessen*
Herbicide Specialist
The National Agricultural Chemicals Assn.
Washington, D.C.

Did you ever stop to think of the many legislative and regulatory restrictions that have been put on herbicides? I am referring to the statutory limitations imposed on the finished product ready for sale to the farmer or consumer, not to mention the innumerable laws pertaining to doing business, in general, under which herbicide manufacturers and dealers must labor.

Before an herbicide can be introduced into interstate commerce, it must be registered with the U.S. Department of Agriculture. Similarly, more than 35 states require registration with state officials, either in the department of agriculture, health, or some other state agency before the herbicide can be sold in the state.

These laws are directed primarily at the manufacturer or the person who offers herbicides for sale. This registration requires the manufacturer to submit labels for review indicating claims made for the herbicide plus other information pertaining to toxicity, both to man and animals, and crops, and tests that show that the herbicide is effective for the purposes claimed on the label.

What about laws or similar restrictions of direct concern to the grower? In eight states at the present time there are "herbicide application laws" which limit or control the application of herbicides. Under these laws in some states, certain types of herbicides or herbicide formulations are often prohibited, or allowed only under strict supervision. Most of these states require the farmer to obtain a license for each application. These "herbicide application laws" are applicable to anyone applying herbicides, whether he is a custom applicator or a person applying heribicides to his own crops.

Another type of law in existence in over 25 states which usually affects herbicide application are the "custom applicator laws." These laws are not all alike and in some states cover only aerial application, in others only ground custom application, and in others both aerial and ground custom applications. Most of these laws require licenses to operate plus posting of a bond or other guarantee of financial responsibility in case lawsuits should arise out of the application of herbicides.

The most recent addition to the list of statutory limitations on the use of herbicides, at least it has been most recently receiving the most attention, is the Food and Drug Laws. Actually, the Food, Drug, and Cosmetic Act has covered herbicides, as well as all other pesticides, since it was passed in 1938. However, not until the passage of the Miller Pesticide Residue Amendment in 1954 were the full implications of the Food, Drug & Cosmetic Act brought to the attention of herbicide manufacturers and to research workers in the field of weed control.

This phase of statutory limitations on the use of herbicides is probably the most interesting, or at least foremost on the minds of many in the trade because of its newness.

I have seen many researchers, and administrators, who are, or have been, active in weed control throw up their hands when you mention the "Miller Bill." True, there has been considerable confusion concerning this piece of legislation and the subsequent regulations issued under it. However, I believe that a few points concerning the Miller Amendment might help clarify some of this confusion.

First, I would like to emphasize that the Miller Pesticide Residue Amendment does not change any of the basic requirements of the Federal Food, Drug, and Cosmetic Act. It provides a more workable method of determining safe levels of residues that may remain when pesticide chemicals are used for food and feed production. An elaborate procedure for obtaining tolerances or exemptions from tolerances exists for those uses of pesticides that leave a residue.

Second, I would like to point out six classifications under which an herbicide may fall when considered in light of the Miller Pesticide Residue Amendment:

1. The herbicide may be exempted from the requirements of the amendment.

2. Certain uses of the herbicide may be exempted from the requirements of obtaining a tolerance, although other uses of the same herbicide may require the setting of a tolerance.

3. Numerical tolerances may be established for uses of the herbicide based on toxicity and residue studies.

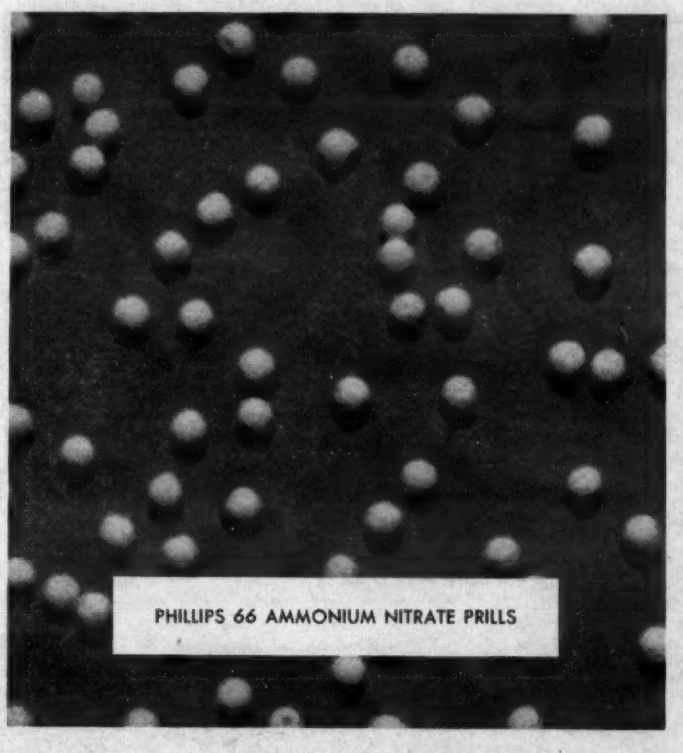
4. Zero tolerances may be set on uses of the herbicide when, in the opinion of the Food and Drug Administration, the herbicide is so toxic that no residue should remain. (This applies to dinitros, for example.) Since the passage of the Miller Amendment, there have been zero tolerances set because the pesticide use does not leave a residue—without regard for the toxicity of the pesticide. This has not been generally followed in the herbicide field, however.

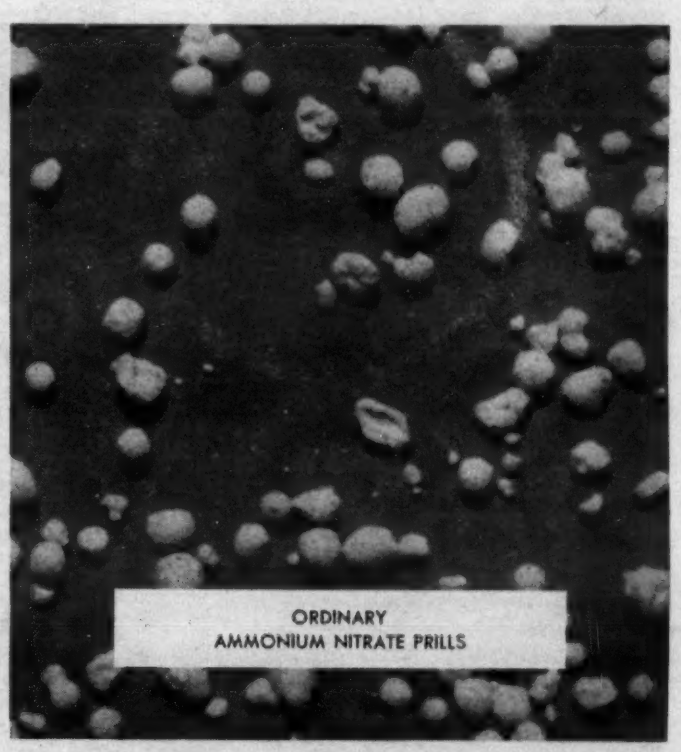
5. No tolerance for uses of the herbicide based on evidence that no residue remains, or what residue does remain is of an insignificant level.

6. No tolerance for uses of the herbicide because no petition has been filed and data has not been submitted to indicate whether the uses leave a residue or not. Any uses which fall under this category which result in residues are illegal under the Miller Amendment.

Most uses of herbicides have been

*Talk presented before the Northeastern Weed Control Conference, New York City, Jan. 8, 1958 and the Weed Society of America, Memphis, Tenn., Jan. 13, 1958.





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approved under classification number five, no tolerance based on evidence that no residue remains. This classification is the one which I believe has caused the greatest amount of confusion. A number of weed workers have been hesitant to recommend uses which fall in this category, although they are perfectly legal.

If no residue remains from a particular use of an herbicide, when applied in accordance with good agricultural practices, the Food and Drug Administration is not concerned with that use, and no toxicity information need be supplied to that agency. However, toxicity information normally required to satisfy registration requirements (toxicity to the applicator and the farmer's crops and animals) must still be submitted to the U.S. Department of Agriculture.

If a residue remains from a particular use of an herbicide, additional toxicity data is required, and the FDA then sets a tolerance or grants an exemption. A petition for a tolerance, in addition to including toxicity data, must contain results of residue studies conducted to determine the amount of residue likely to remain when the crop is harvested.

As pointed out before, where no residue results from a use of an herbicide, the use may be cleared on a no residue basis. ("The use presents no residue problem" is the way such clearances are commonly stated.) Such a clearance can be given by the USDA, and the Food and Drug Administration need not be brought into the picture when considering such uses.

I might hasten to add, for the benefit of any not actively engaged in research work at the present time, that I know of no research program underway today, pointed towards the development of new herbicides, in which candidate chemicals are not thoroughly tested for possible toxicity to humans, both when contacted and when ingested through eating food that may contain residues.

I was at first assigned a talk on "The Current Status of Herbicide Registrations." I do not feel that anyone other than a person engaged in herbicide registration activities of the USDA could give you the "current status."

I think that many will agree that there is too much "status of confusion." I think this has come about through the lack of good communications between registration and control officials, on the one hand, and the researcher, on the other hand.

The publication "A Summary of Certain Pesticide Chemical Uses," published recently by the pesticide regulation section of USDA has been forwarded to each State Agricultural Experiment Station. This publication contains all uses of pesticides which have been formally cleared under the Miller Bill for use on food, feed, and some fibre crops. It gives the basis for acceptance by the pesticide regulation section of each such herbicide use, as well as other pesticide uses. For any who are responsible for recommendations in a state, I recommend that the publication be reviewed thoroughly. It lists herbicides and herbicide uses which are being accepted for registration by the U.S. Department of Agriculture as meeting the requirements of the Miller Amendment. This does not mean that all uses not included in the publication are illegal. For instance, non-agricultural uses of herbicides are not included since such uses do not fall within the scope of the Miller Amendment. Other uses have not yet received official clearance, although they may leave no residue. Also, to date, no uses have been cancelled that are not included in the publication.

The information on herbicide uses contained in "A Summary of Certain Pesticide Chemicals" is based on specific applications and conditions and applies only for the rate of herbicide and the time of treatment as listed in the publication. It would take too long to give details for each use. I would like to point out again, however, that most uses of herbicides have been cleared on a "no residue" basis. It is important to keep in mind that an herbicide can be legally used, even if it does not have a published tolerance, when its use leaves no residue.

The industry, in cooperation with the Food and Drug Administration, is again this year stressing a "read the label" campaign aimed at reaching as many farmers and growers as possible. Label claims are developed today with such close cooperation with state experiment stations that directions for use are usually identical with state recommendations.

The exception to this is where label claims and directions may be developed to meet average conditions across the country, whereas local conditions may warrant deviations from directions on the label. I would like to point out, though, that any person who makes claims or recommendations which differ from those registered with the U.S. Department of Agriculture and approved by the Food and Drug Administration, with or without a tolerance, may be held responsible if such directions result in a crop being seized for illegal residues.

Meno Schoenbach

NEW APPOINTMENT—Clarence E. Elsas, president of Fulton Bag & Cotton Mills, Atlanta, Ga., has announced the appointment of Meno Schoenbach as advertising and sales promotion manager, with headquarters in Atlanta. He also will be responsible for the company's public relations program. Recently, all of Fulton Bag & Cotton Mills manufacturing and sales operations were consolidated in its integrated 1,250,000 sq. ft. Atlanta facility.

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Importance of Correct Recommendations by Fertilizer Dealers

By Phil Marvin

Homar Agricultural Chemicals, Manhattan, Kansas

EDITOR'S NOTE

The farmer relies to a great extent on the recommendations given him by the dealer of farm chemicals. That is why the dealer has a big responsibility in correctly advising the farmer, says Mr. Marvin. The accompanying article was adapted from a talk given by Mr. Marvin at the Kansas Insect and Weed Control Conference at Kansas State College, Manhattan.

Agricultural chemicals are economical tools for the farmer only when used correctly. Like feed supplements, farm machinery and hybrid seed, pesticides need to be used wisely to obtain their great potential value. The man who sells the chemical to the farmer greatly influences the possible results of insect and weed control.

To many—probably to a great majority of Kansas farmers—the use of pesticides (insect and weed control chemicals) is new and frequently confusing, as confusing as the situation of the boy who dropped his chewing gum in the chicken yard. The farmers continually seek advice and help in meeting their insect and weed control problems. Reports from various county agent meetings indicate that over half of the questions they receive have to do with insect problems.

The man who sells pesticides has great influence on their proper usage after they leave the store. Information from experiment stations and colleges is being sent out continually—primarily by the extension services—through local and regional newspapers, farm papers and magazines, bulletins and leaflets, radio and TV, meetings and demonstrations. Farmers become aware that such and such an insect or weed can be controlled by such and such a chemical. These forms of information reach farmers who still find spraying a new and novel experience, and who are not yet ready mentally to accept specific recommendations. In other words, the college and extension activities make farmers aware of a situation and possible control measures.

But the farmer really begins to concentrate on the proper chemical and rate of application only when he is ready to buy the pesticide. Then it is the dealer who prescribes the material and spraying procedure.

Farmers who buy chemicals from well-informed dealers receive the best results. This has been demonstrated in an Illinois survey. The farmer relies to a great extent on the recommendations given by the man who sells the chemical to him. Of course farmers read—most read well. Yet, just as we'll follow a dealer's instruction as to tuning a new TV set rather than reading the directions, so the farmer tries to remember the instructions given to him by the salesman. It takes time and effort to read label directions which are often strange and in unfamiliar terms. Thus, the farmer customer places a big responsibility upon the dealer, so the dealer is obligated to become well informed.

The responsibility reaches such a magnitude that the dealer recommendation may actually result in a net profit for the farmer. Properly used, pesticides are economical tools. Used improperly, they become a waste of money, time and effort when no control results. And under some conditions, the misusage of a chemical can result in further crop loss.

As a business man in a farm community, the pesticide dealer has a moral obligation. His main reason for being in business is to serve the farmer—to assist the farmer in his farm operations. The assistance may be towards any of several goals, including net financial returns, added security and comfortable living. Through legitimate profits, the dealer is paid to render a service rather than to make a sale. He is morally obligated to be interested in results obtained from the materials he sells. Further, he should know potential uses of the pesticides he sells, their possible hazards and the best methods of application—or at least be anxious to obtain such information for his customers.

At this point, it should be emphasized that the dealer sells chemicals on the same basis as the farmer raises and sells cattle, wheat, alfalfa and other crops: to make a living for himself and his family. Each type of business man first has to pay taxes, interest on loans, repay the loans themselves, etc., before there are usable profits for him and his family. It becomes obvious that the dealer must realize enough margin from pesticide sales to cover the investment—including time for education as well as for sales.

Aside from the moral obligations, it is good business for the dealer to make correct recommendations. As the farmers proper, so will the community, probably including the seller of pesticides. The more reliable a man's recommendations become, the more the farmers rely upon him and, it logically follows, the more they patronize his business. It is good business ethics and good advertising to have pleased customers.

The dealer must be able to give correct recommendations as to the exact pesticide to use and the dosage, and also to point out potential hazards associated with the chemical and its application.

To many dealers, this is a large order—a lot of responsibility. Yet many have shown an interest, willingness, and desire to be better informed in order to be of greater service to their customers and to their communities.

Pesticide dealers are a direct link between research and extension recommendations on one side and the farmer on the other. Their main source of information will be the labels on the pesticide containers. But the county agricultural agent should never be overlooked; close cooperation reduces confusion and greatly helps the farmer. The college, which is able to serve both dealer and farmer, always is ready to work with you, to give advice and recommendations and even to assist in meetings and field demonstrations when possible. Your suppliers look to you as valuable customers. Your prosperity affects them directly, which alone makes them more than anxious to serve you.

The dealer of agricultural pesticides has moral and economic obligations to insure that the products he sells benefits his customers. The responsibility requires that the interest continues beyond the immediate sale—that it continues through application until the final results are known. The sale includes advice as to proper chemical for a specific control problem, the rate of application, the best and alternate methods for application, safe usage (for applicator, for the crop or animal to be treated and for the various consumers of the crop or animal), safe handling and storage for the pesticide. Correct recommendations by the pesticide dealer insure repeat customers.

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman

Croplife Marketing Editor

What does the farmer do at night, after the day's work is over, when he has perhaps an hour for relaxation before he goes to bed? Does the farmer of today, as the farmer of old, sit in front of the stove, cracking hickory nuts, while his wife makes a hook rug and Grandma creaks back and forth in her rocker, dreaming of happy days now only a memory?

No, the farmer of today is apt to be a busy man—in the house—after daytime work hours. Most likely he spends an hour a night—a few nights a week at his farm office desk.

Farm office desk? Yes, this is a familiar picture in numerous farm homes. The farmer is a business man, too. Many have an investment of $50,000 or more in farm land, buildings and stock. It requires lots of bookwork to keep this enterprise functioning properly, and at a maximum profit.

The farmer is like a dealer. He's in business for himself. He spends considerable time at his business desk at night, on rainy or stormy days, doing bookwork, thinking, figuring and finding answers to cost and production and profit problems.

In fact, as one farm expert said, "Farm office work has become as vital to success as hard work in the field."

Because the farmer is a better business man than he has ever been, because he has a desk of his own, this means that a dealer can send the farmer more interesting literature—containing profit-promoting facts and figures—than ever before, with the likelihood that the farmer will read it more carefully and file important parts of it away for reference.

The next time you send a piece of direct mail to a farmer, urging him to buy at your store, think about the modern farmer. He may be sitting at his desk, just like any other business man and studying carefully most of the material that comes across his desk.

In your newspaper and direct mail advertising, you can effectively urge the farmer to clip and file special information he needs and which he can use to farm more profitably. Most likely he will act on your suggestion to clip and file it for ready reference.

Dealers who wish to give farmers something useful as a premium or gift at holiday time might consider his desk needs, such as a memo pad. The pad should have on it the dealer's name because this is a worthwhile advertising practice. Another suggestion is to furnish him with a ruled sheet of fairly heavy stock on which he can list names and telephone numbers he calls most frequently. Another suggestion is a record book in which he can keep income and expense figures. The businessman-farmer appreciates being treated as such.

NEW PACKAGE DESIGN—Billboards are being used extensively throughout central Florida to introduce the new package designs for Chase and Co.'s line of fertilizer products. The company reports that the packages, as well as the billboard, were designed by Union Bag-Camp Paper Corp., multiwall bag manufacturer.

What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6695—Booklet on Nitrogen Solutions

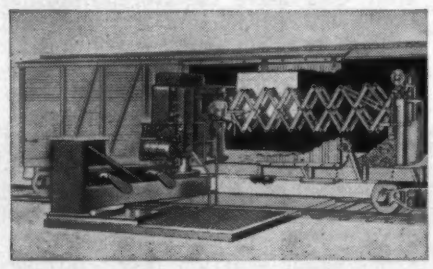
A technical booklet on nitrogen solutions for fertilizer manufacture has been published for the fertilizer industry by the Sohio Chemical Co. The booklet, written by Sohio's technical service department, is a reference handbook for fertilizer manufacturers. Designed for day-to-day use in plant operations, the booklet contains a 16-page section discussing manufacturing with nitrogen solutions, plus basic information on various nitrogen solutions. A section discussing fertilizer manufacture provides information in selecting solutions, along with a review of such topics as: Uniformity of ammoniation and absorption, reversion, temperature, alkalinity and acidity, hygroscopicity and solubility, and the use of urea and other specific materials. Other sections discuss granulation versus conventional mixing, considerations and calculations in formulation, and plant and personnel safety. The last section of the plastic-bound booklet includes product information sheets on various nitrogen solutions used in fertilizer manufacture, as well as aqua and anhydrous ammonia. Individual product information sheets as released by Sohio may be added to the booklet to keep product information up to date. Check No. 6695 on the coupon and mail it to Croplife to secure the booklet.

No. 6694—Research Chemicals Booklet

"Research Chemicals from Dow," a new 40-page booklet, lists some 160 chemicals available in sample quantities from the Dow Chemical Co., Technical Service & Development. A substantial portion of the chemicals listed are being offered for the first time. The booklet is the first comprehensive listing for general distribution of products that are of interest to research personnel and available for sampling. Chemicals described are inorganics, saturated and unsaturated aliphatics, aromatics and heterocyclics. Each listing includes the chemical's name, formula, physical description, some typical properties and sample size available. Check No. 6694 on the coupon and mail it to Croplife to secure the booklet.

No. 5966—Boxcar Unloader

Details of the hydraulically-operated boxcar unloader manufactured by Stephens-Adamson Manufacturing Co. have been announced. Company officials say that the unit can unload granular, pulverized or any free-flowing materials from large boxcars in less than 30 minutes. Features are: One-man operation; hydraulically-actuated boom swivel and scoop actions; positive digging and raking



actions; and operator is located on an operation platform outside the car. The boom and scoop can be set into automatic operation but the operator can stop the cycle at any time to redirect the boom. Further information may be obtained by checking No. 5966 on the coupon and mailing it to this publication.

No. 6696—Grass Seed Mat

A new method to build a lawn will be introduced in 10 states this spring. The method consists of unrolling a carpet of grass seed on the soil, and watering it. Minnesota Mining & Manufacturing Co. has developed the product, which is a thin mat of green fibers containing grass seed. The mat clings to the ground, preventing the seed from being washed or blown away, preventing soil erosion, and retarding weeds, it is claimed. The mat disappears from view as the grass grows. The seed, blended for each climate, is imbedded evenly throughout the mat to assure uniform grass growth. Called "3M" brand grass mat, it will first be introduced in March and April in parts of New York, New Jersey, Connecticut, Michigan, Wisconsin, Minnesota, Iowa, Indiana, Illinois and Ohio. Secure details by checking No. 6696 on the coupon and mailing it to Croplife.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6685—Gibberellin Bulletin

An 18-page technical bulletin which reviews research findings on the uses of the gibberellins is available from Merck & Co., Inc. The company, which produces the plant growth stimulant under the registered trademark "Gibrel," says the bulletin is especially helpful to those with a technical background. The bulletin contains an annotated bibliography of 188 pertinent scientific papers. Check No. 6685 on the coupon and mail it to Croplife to secure the bulletin.

No. 5923—Bulk Scale

The newest addition to the materials-handling line of the Burrows Equipment Co. is a 1,000-lb. model

1200 bulk scale. Company officials said the "heavy-duty scale features a built-in Fairbanks-Morse scale to weigh any lot of material down to the ounce, accurately and quickly, as it is handled." The unit is 38 in. high and 30 in. wide, and has a hopper 40 in. in length. All controls—two-wheel foot-brake, scale, dump handle and pushing handle—are located at the rear, within easy reach of the operator. Standard equipment includes 10 in. rubber wheels at the front and 6 in. roller bearing swivel casters at the rear. Details may be secured by checking No. 5923 on the coupon and mailing it to this publication.

No. 6692—Silica Pesticide Carrier

A new spray-dried form of Zeolex 7A is now in production by the J. M. Huber Corp. Spray-dried pellets of the silica pesticide carrier yield higher absorptions and suspension values when airmilled or finely ground with toxicants such as DDT in the formulation of high concentrate wettable powders, it is claimed. The product packs tighter and saves more than 20% in storage space over the regular powder form, at no price increase, company officials claim. Check No. 6692 on the coupon and mail it to Croplife for further details.

No. 6690—Soil Fumigant

"Mylone" pre-planting test applications on turf are giving good control of weed seeds, soil diseases, insects, and nematodes, according to Union Carbide Chemicals Company, Division of Union Carbide Corporation. The soil fumigant is now being used before planting to control soil pests in ornamental, tobacco, and certain vegetable seed beds, states Union Carbide. The company manufactures the basic chemical and supplies it to formulating companies which produce their own trademarked products, based on "Mylone," for commercial sale. The formulated dry product is distributed with a fertilizer spreader over the surface of the turf bed and then irigated into the soil. No plastic cover is needed on the bed. "Mylone" must be applied ahead of seeding or sprigging in the spring and allowed time to dissipate so it will not affect the young grass, the company explains. The product can also be used in the fall before spring planting. Secure details by checking No. 6690 on the coupon and mailing it.

No. 6689—55-Gal. Steel Drum

Designed to save space and reduce handling and shipping costs, a new 55-gal. steel drum has been developed to interlock with adjacent containers when any number are unitized or packed closely together. Ray E. Frase (left), manager of the special products department for Signode Steel Strapping Co., and Vern I. McCarthy, Jr., vice president of Vulcan Containers, Inc., point out the design of the rolling hoops which are the key to the interlocking feature of the new "Uni-Drum" container. When unitized, a group of the new drums can be handled by a standard lift truck, it

(Continued on page 14)

Send me information on the items marked:

☐ No. 5923—Bulk Scale	☐ No. 6689—55-Gallon Drum
☐ No. 5947—Bulk Storage	☐ No. 6690—Soil Fumigant
☐ No. 5959—Seed Treatment	☐ No. 6691—Tolerances
☐ No. 5966—Boxcar Unloader	☐ No. 6692—Pesticide Carrier
☐ No. 6685—Gibberellin Booklet	☐ No. 6693—Fertilizer Clamps
☐ No. 6686—Fertilizer Applicator	☐ No. 6694—Chemicals
☐ No. 6687—pH Booklet	☐ No. 6695—Nitrogen Solutions
☐ No. 6688—Seed Stimulant	☐ No. 6696—Grass Mat

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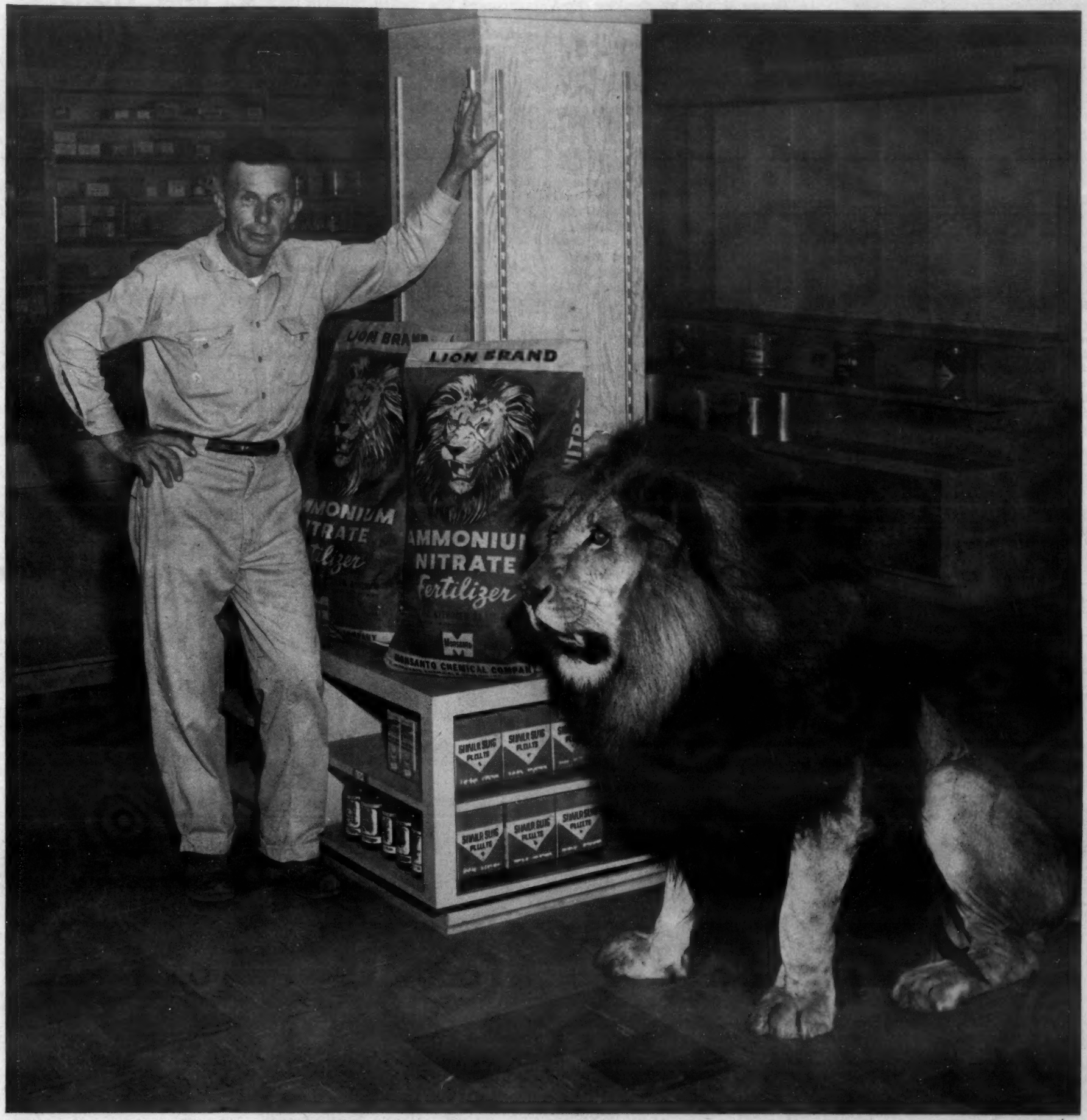

ACTUAL PHOTO OF MONSANTO'S LION IN A DEALER'S STORE

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- Lion brand contains both of two important kinds of nitrogen: quick-acting nitrate nitrogen that gets plants started fast . . . and *long-lasting* ammonia nitrogen that resists leaching, feeds crops steadily for months.
- Lion brand is prilled . . . coated pellets of uniform size for easier spreading.
- Lion brand is *guaranteed* to flow freely not for just a year, but *until used*, when stored properly.
- Lion brand is now in a new green and yellow bag constructed to give greater protection.

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- Advertising campaigns promoting mixed fertilizer as well as Lion brand in leading farm publications read by your customers.
- Local farm radio, billboards and local newspaper advertising support.
- Literature on crops grown in your area, including mixed fertilizer recommendations.
- Fertilization wall charts for your area.
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* * *

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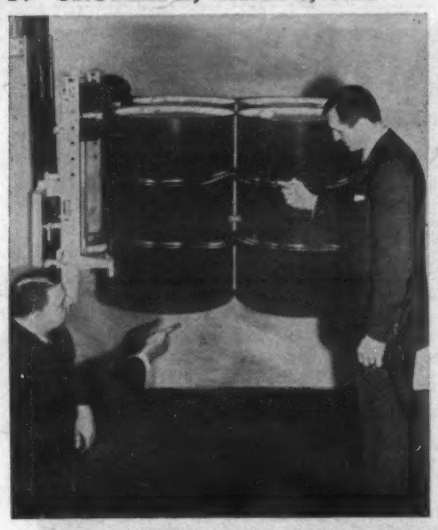


is claimed. Transit damage can be reduced because the drums contact each other at their six strongest points, the officials say. The "Uni-Drum" was developed by Signode Steel Strapping Co. in conjunction with Vulcan Containers which will manufacture and market the container. Secure details by checking No. 6689 on the coupon and mailing it to Croplife.

No. 5947—Bulk Materials Storing

The latest information concerning Day equipment for storing and handling bulk materials is contained in a bulletin prepared by the Day Co. Descriptions, specifications and dimensions of the company's vertical tanks and horizontal tanks are included. Pneumatic conveying systems, bulk material handling accessories and custom fabricating are also discussed. The bulletin contains photographs of typical bulk material tank installations.

No. 5959—Alfalfa Seed Treatment

Details of a new systemic insecticide made by the American Cyanamid Co. to combat the spotted alfalfa aphid during the early stages of growth in alfalfa fields have been announced. The product, called by the trade name, Thimet, was recently cleared by the U.S. Food and Drug Administration for treatment of alfalfa seed prior to planting, according to Cyanamid. Officials state that this treatment "will control the spotted alfalfa aphid on seedling alfalfa plants for a period up to six weeks after emergence." Later the product breaks down so that there is no residue problem in the hay, it is claimed. Seed which has been coated with "Thimet" germinates and allows the product to be taken by the seedling rootlets into the plant where it remains up to six weeks. After the product's potency disappears, conventional type insecticidal sprays or dusts are suggested. Seeders need to be adjusted when treated seed is used because of the added bulk. Company officials state that leafhoppers, mites and other sucking type pests of alfalfa are also controlled through seed treatment. Details may be secured by checking No. 5959 on the coupon and mailing it to this publication. Please print or type name and address.

No. 6693—Liquid Fertilizer Clamps

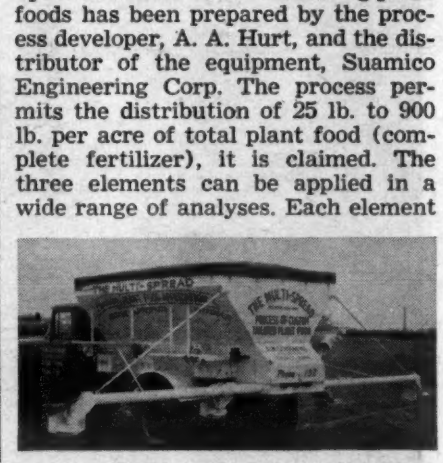
Tiura Manufacturing & Sales has available a line of liquid fertilizer applicator clamps and shanks for distribution in the western slope area of the U.S. The products are intended for commercial applicators to buy, use and introduce to their customers. The clamps are available in several styles and sizes to fit standard or rounded shanks. They will fit 2-in. by 2¼-in. by 2½-in. square tool bars. The Tiura line includes the standard shank, the "Turk" shank and the "A-10" for specialized application. Secure details by checking No. 6693 on the coupon and mailing it to Croplife.

No. 6691—Diazinon Residue Tolerances

Geigy Agricultural Chemicals, Division of Geigy Chemical Corporation, announces that Diazinon residue tolerances of 0.75 ppm have been established for tomatoes, cabbage, cauliflower and broccoli. Growers may now apply Diazinon sprays or dusts to control aphids, leafminers and vinegar flies (Drosophila) on tomatoes; aphids, diamondback moths and imported cabbage worms on cabbage, cauliflower and broccoli. Details may be secured by checking No. 6691 on the coupon and mailing it to Croplife.

No. 6686—Plant Food Application

New literature on the "Multi-Spread Process" for distributing plant foods has been prepared by the process developer, A. A. Hurt, and the distributor of the equipment, Suamico Engineering Corp. The process permits the distribution of 25 lb. to 900 lb. per acre of total plant food (complete fertilizer), it is claimed. The three elements can be applied in a wide range of analyses. Each element



can be regulated individually. Four slow-speed fans take care of a 30-ft. spread. The equipment can be geared either through power take-off or from the truck's drive shaft. Distribution of the equipment will be through dealers whose inquiries are welcomed. Check No. 6686 on the coupon and mail it to Croplife.

No. 6687—Soil pH Booklet

Bulletin 731—"What Every Plant Grower Should Know About Soil pH" has been prepared by Beckman/Scientific Instruments Division. The booklet contains charts, graphs, and illustrations—designed to help both the professional and amateur grower in achieving better lawns, bigger crop yields and more for his fertilizer dollar. The 16-page booklet, written by the well-known agricultural consultant, Dr. Robert E. Atkinson, may be obtained free of charge by checking No. 6687 on the coupon and mailing it to Croplife.

No. 6688—Seed Stimulant

Merck & Co., Inc., has available a "technical service use direction sheet" describing "Gibrel Seed Stimulant 88." The material is intended primarily for seed producers and processors, and it discusses characteristics of the seed stimulant, directions for use, methods of treating seeds, resulting germination of treated seeds, and early growth of seedlings. It also lists seeds which respond to "Gibrel Seed Stimulant 88." Secure the sheet by checking No. 6688 on the coupon and mailing it to Croplife.

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FARM SERVICE DATA

Extension Station Reports

Applying soil insecticides to cornfields before planting increased plant stands an average of 7%.

Steve Moore, extension entomologist at the Illinois Natural History Survey, says these insecticides control pests that feed on the seed and underground portions of corn plants. Such pests as wireworms, rootworms and grubs cause poor germination, lodging and reduced yields.

Mr. Moore recommends using either aldrin or heptachlor. They can either be broadcast or applied in the row as a band treatment. Broadcasting requires 1½ lb. of insecticide per acre. The insecticide should be disked into the soil immediately. The band treatment requires only 1 lb. of actual chemical per acre. Application at planting time in the starter fertilizer or as a spray behind the planter shoe is recommended.

Research tests show that aldrin and heptachlor are equally effective. But broadcasting produced a 34% larger plant stand than the row treatment. The combined averages of both the chemicals showed a 7% increase in plant stand and 4 bu. per acre average increase in yield.

Mr. Moore says the effects of aldrin and heptachlor also carry over from one year to the next. The first year after application 12 test fields out of 15 showed a 7% increase in plant stand. Three fields showed no difference. The second year the same 12 fields showed an additional 3% increase in plant stand.

According to Mr. Moore, soil insecticides can be profitably applied in most Illinois cornfields.

During the past four years, 66% of several hundred fields tested showed a profit over and above cost of treatment. The tests were conducted by J. H. Bigger, research entomologist with the Illinois Natural History Survey.

The chance of realizing a profit from treatment is greater on the second crop of corn than on the first. Chances of profit increase when insecticides are applied to sod land, bottom land and other land having wireworm infestations.

If a soil insecticide is not applied, Mr. Moore recommends using treated seed. But seed treatment is not necessary if an insecticide is applied.

★

"Farmers have to feed the billions of microbes in the soil if they want to build soil-improving supplies of humus." That is the statement of the Midwest regional office of the NPFI, in a survey based on studies by midwestern agronomists.

"The crop residues, stalks, leaves and roots plowed under are the raw material from which humus is manufactured," the group said.

"The soil microbes are the manufacturers. If all the conditions are favorable, these microbes will take over and convert the raw materials into humus.

"These microbes need large amounts of nitrogen and phosphate to do their soil building job. If the soil is low in available supplies of these nutrients, the microbes won't be properly fed. Then the process of breaking down the raw materials into humus may be slowed down or halted altogether.

"So it is wise to add fertilizer when corn stalks, straw and other crop residues are plowed down," the office said. "Such a practice takes care of the needs of the microbes so the soil can be improved and it helps supply nutrients to help feed crops which follow."

When the soil has plenty of humus, its physical condition is good, the survey points out. The soil is loose, grainy and porous. It drains easily. More water can get in and more is held for the benefit of growing crops. There is plenty of room for crop roots to forage for moisture and nutrients.

★

An extra dollar spent on fertilizing corn can return as much as $3.75 in increased value of the crop.

This is the statement of Dr. Mervin Smith, agricultural economist of Ohio State University, based on Ohio tests.

Dr. Smith points out that prices of fertilizer have not increased nearly as much as other commodities the farmer buys. The average costs of all farm production items have increased nearly two and one half times in the past 20 years.

Because of these changes in costs, says Dr. Smith, it is to the farmer's advantage to spend more for fertilizer and less for labor, land, machinery and other production items.

The price advantage for fertilizer is likely to continue, says Dr. Smith.

★

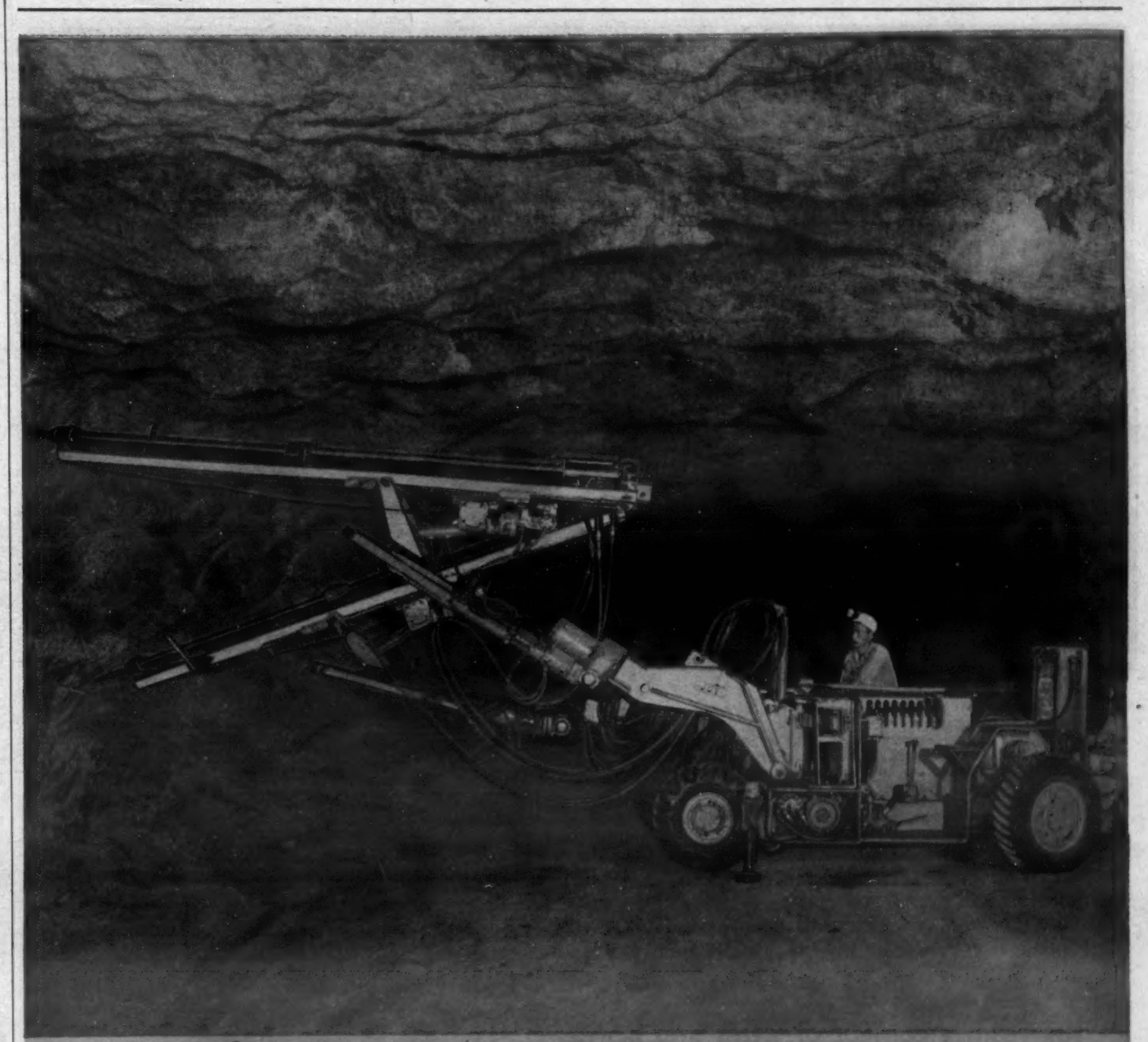
Producers of Tennessee's annual $5 million strawberry crop may have another pest to control in the form of the "strawberry crown miner."

S. E. Bennett, University of Tennessee experiment station entomologist, says that the pest was discovered in Johnson County last April. So far as is known, infestations have been confined to Johnson County. Originally the insect came from the Pacific Northwest, and it was reported east of the Rocky Mountains only in 1948. That year damage to northern Iowa's strawberry crop was considerable.

"The strawberry crown miner gets its name from the way it injures the strawberry plant," explains Mr. Bennett. "It 'mines' or hollows out the crowns of the strawberry plants. The result is that the injury greatly weakens the plant and it eventually dies."

The crown miners overwinter in the strawberry crown as larvae and pupate around the middle of June. Adults emerge the last part of June. The adult is a small, silvery gray moth with dark linear markings and forewings heavily fringed at the posterior margin. Egg laying occurs early in July, and duration of larval development is such that there is only one generation per year.

"The larvae are carmine-pink in color," Mr. Bennett describes. "That helps in recognizing them."



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Irrigation Equipment, Fertilizer Sales, Service Are Profitable Combination

Selling plant food in terms of cost per unit, and furnishing irrigation service to the farmer to help increase crop yields, is proving to be a good combination for Faith & Woods, La Crosse, Ind., a firm which has anhydrous ammonia sales and storage locations at six points in this state.

The firm sells about 3,000 tons of anhydrous ammonia annually and also sells some dry fertilizer. Farmers can have anhydrous applied to their land by the firm for $1.50 an acre. Or, if the farmer wishes to rent an applicator he pays about 75¢ per acre.

Roy Faith and Phil Woods have a merchandising plan which brings results. They will work with a farmer to show him exactly how much his plant food units cost him per acre whether he bought dry or liquid or anhydrous fertilizer. By computing costs in this manner, they have earned the respect of their customers and given them information they will remember and also use.

Being honest with the farmer in claims for what fertilizer will do is absolutely imperative in building a solid business, declares Mr. Faith. Don't deal in generalities but get out a pencil and paper and figure with him just what his fertilizer past and present costs him in terms of plant food units. Then he can see for himself whether or not he bought the fertilizer best for his special needs, Mr. Faith says.

"Farmers appreciate this kind of figuring," Mr. Faith says, "because they know they can check all your statements with this method and it builds confidence."

SUCCESSFUL COMBINATION—A thriving irrigation supply and fertilizer business has been developed by Faith & Woods, Inc., at La Crosse, Ind. The firm's headquarters is pictured here.

One farmer who used a large application of nitrogen on his corn land got such excellent results that he told Mr. Faith that he planned to double the use of nitrogen the following year. Mr. Faith advised him not to do it, because his soil sample showed that the corn land was getting enough nitrogen using the present amount. The farmer appreciated this advice very much.

Mr. Faith and Mr. Woods also spend much time with farmers aiding them in taking soil samples which are sent to Purdue University college of agriculture for analysis. Then when the report comes back to the farmer, the fertilizer team of Faith and Woods work with the farmer on such an analysis and help interpret it in terms of cost.

"You've got to do a lot of this service work to aid the farmer before you begin to sell him something definite," says Mr. Faith. "He really wants and needs such help."

The firm holds seasonal meetings in the various areas where it sells fertilizer and at such gatherings farmers can learn many things about fertilization. Slides and movies tell a great deal, and a question and answer period usually brings out additional knowledge. Mr. Faith and Mr. Woods are always glad to conduct such meetings, because they know that through such schools, the farmers will learn to use fertilizer more wisely and eventually become better and more satisfied customers.

Faith and Woods, Inc., handles Mathieson portable irrigation systems and many of them are installed in this area where, combined with proper fertilization, they have increased crop yields considerably.

Mr. Faith says that his firm works with three well drillers in the area. In some instances the farmer has enough surface water so that he does not need to have a well drilled. Again test borings may tap underground water sufficient for irrigation. But in many instances the farmer may need to have a 50 or even 125-ft. well drilled, in order to supply the amount of water which he needs for his crops.

Depending upon the amount of irrigation, the farmer can get water for his crops at rates varying from $30 to $100 per acre, states Mr. Faith. Generally most farmers in this area want a minimum of 100 gal. of water per minute per acre during the growing season.

"When we work with a farmer on an irrigation system, we have a very good opportunity to get his fertilizer order also," says Mr. Faith, "and we work for it, too. Likewise when we sell a man fertilizer we sometimes are able to sell him irrigation service."

This company also does some crop dusting in the area. Usually the management hires airplane pilots to do this work on a contract basis and this is satisfactory. In some instances airplane pilots have sowed rye in August for some customers and the project worked out quite well.

"We are constantly visiting the leading farmers in this area checking on their fertilizer practices," says Mr. Faith. "This is the best way we know to keep abreast with what the farmers are doing. And it's our best form of sales promotion, too."

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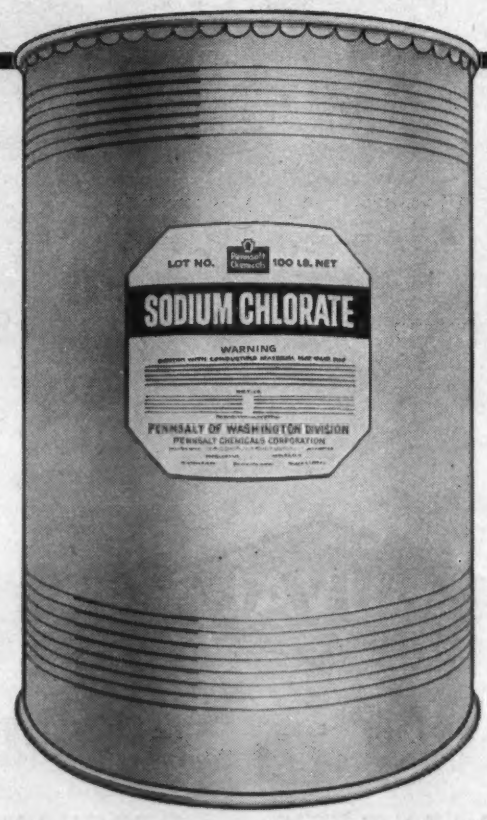

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Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

A deep frown settled on the broad forehead of Oscar Schoenfeld as his metal letter opener slit one envelope after another in the morning mail. The clock said eight thirty, and as Oscar glanced across his desk at the empty chair at his partner's desk, his lips tightened. Now he looked at his wrist watch to check that time with that of the electric clock on the wall. His own watch was off about a second, and so Oscar carefully adjusted it. He was always one to know exactly what time it was, and he was never late for work.

"Just think!" he mumbled to himself. "McGillicuddy's an hour and a half late now—and on Monday morning! He's getting worse and worse. Good thing there are some people around here who get to work on time and put in a full day!"

He went back to work, carefully taking all clips off letters and putting them into a large bowl on his desk. Someday that bowl would be full of clips which another, more careless man might waste.

Now Oscar took all the checks which had come in, noted each carefully, then took them over to the bookkeeper. He glanced at his watch. "8:45!" he exclaimed. "This is the limit. I'm going to telephone him."

Nora, his partner's wife answered. She sounded very sleepy.

"Pat's just getting up, Oscar," she said. "We were at Mr. and Mrs. Hagen's golden wedding last night and it got awful late before we got home."

"I was up late, too, playing schafskopf," Oscar said crisply, "but that didn't stop me from getting to work on time, at 7 o'clock. The business day goes fast, you know."

"Oh," said Nora, in a subdued voice. "I'll tell Pat you're anxious for him to come down."

"He acts like a banker instead of a fertilizer dealer," Oscar grunted to himself after he had hung up. "Who does he think he is? Why—why, if I didn't watch the pennies around here, he'd be busted in a short time."

"But he does get a good idea once in a while," one of the clerks said timidly. "That—that true and false ad really got quite a few fertilizer orders, and—"

"Oh, farmers were ready to buy fertilizer anyway," Oscar snapped. "That ad didn't help too much."

It was almost ten o'clock when Pat McGillicuddy came to work, and his step was slow. He smiled cheerfully, sat down in his chair, stifled a yawn and said amiably, "Oh, boy, what a night! We didn't get home until 3 in the morning. I'm all tired out."

"Huh," said Oscar. "You got to get enough rest if you want to be any good for business the next day." And he glanced sharply at his partner, whilest sorting correspondence.

"It was Mr. and Mrs. Hagen's golden wedding and I never saw so many relatives and friends at any other party," Pat said. "That farmhouse is big, but it sure was crowded when they all got together. And sing—my fingers are sore from playing that old cello. But how those farmers wanted to sing—Irish, French, Scandihoovian and all kinds of songs. Nora must have played the piano for five hours, too."

"If you would work that hard at this business," Oscar put in sharply, "we'd do so well we could open branches in other towns."

Pat's blue eyes twinkled. "But I was working—only I didn't intend to. I only went to the party because John Hagen asked me; he knew Nora and I would play a little music for him and his friends. And eats. I can't look a cake or pie in the face for a week."

Oscar looked more irritated than ever. In fact, he was so irritated that he got up, took three already sharpened pencils to the sharpener and started giving them the works all over again. "You didn't want to work, but you did. What kind of monkey business is that? It just doesn't make sense."

Pat chuckled. "Oscar," he said. "I have always said that the right kind of night work pays off in business, too. I met so many farmers at John Hagen's and sang so many songs with them that pretty soon some of them started giving me fertilizer orders—and spreading orders, too." He reached into his inner pocket and brought out a stack of paper torn from a notebook. He tossed the crumpled mass over to Oscar's clean, orderly desk.

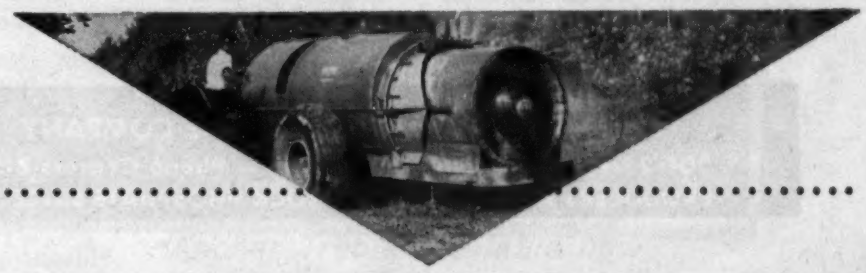
As the bewildered Oscar began separating the crumpled paper and spotting the orders, Pat said: "The more we sang, the more orders seemed to flow in without asking. I didn't ask for a single order, so help me, Oscar. But, of course when a farmer asked me if it would pay him to double his fertilizer application I couldn't help saying 'yes' in most instances."

Oscar was staggered by the tonnage of those orders, but his cautious nature reasserted itself. "I hope they pay for this fertilizer," he said. "I see a couple of so-so farmers in this list. After all, it's money in the till that counts. We can't live on promises."

"That we can't," Pat agreed, "but I'll collect from all of them. Just keep prodding me when the right time comes, Oscar. But it's sure a funny thing, I can sell more fertilizer when I visit with customers and laugh and joke with them. If I start

(Continued on page 19)

FOLIAR APPLICATION...



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Citrus White Fly Quarantine Adopted

SACRAMENTO, CAL.—The California Department of Agriculture has adopted an emergency plant quarantine against citrus white fly in Sacramento.

Since the discovery of the pest here on Jan. 8, survey crews from the department and the office of the Sacramento County Agricultural Commissioner have made a yard-to-yard search to determine limits of the infestation.

The quarantine lists host plants of the citrus white fly which must either be completely defoliated or fumigated by methods approved by the department before being removed from the quarantined area.

The Sacramento area has the only known infestation in California at present. State and county departments of agriculture have fought this pest for about 30 years in 14 counties. Each infestation was eradicated after extensive treatments. A previous Sacramento infestation was eradicated in 1946.

Minnesota Dealer Meetings Scheduled

ST. PAUL—A series of March meetings for seed and fertilizer dealers has been planned by the University of Minnesota. They will be held at Gullickson's Cafe in Tracy March 25, Porter Hotel in St. Peter March 26, Hotel Albert in Albert Lea March 27 and Legion Hall in Winona March 28. The program will be presented by expansion specialists from plant pathology, agronomy and soils departments at the university.

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What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Final results of a survey made for the National Plant Food Institute by National Analysts, Inc., gave an enlightening insight on how farmers regard fertilizers. Soil tests, demonstrations rate high in helping the purchaser to make up his mind on what to buy, the survey indicated. The survey also indicated a need for education of the farmer on even the basic facts of what the grade numbers mean in terms of soil needs.

Paul Gregg, San Antonio, Texas, was named chairman of the Southwestern Branch of the Entomological Society of America at the group's meeting at Houston. He succeeded C. R. Parencia, USDA, Waco, Texas.

Dr. George C. Schweiker was named to the new position of manager of research for Velsicol Chemical Corp., Chicago.

Delhi-Taylor Oil Corp. announced that it will develop plans for a $20 million potash mine and mill in eastern Utah.

Planters Chemical Corp. announced that it is building a new dust blending operation at Fayetteville, N.C. for insecticides, fungicides and weed killers. The new unit was scheduled for opening in April.

Russell B. Stoddard, Fairfield Chemical Div. of Food Machinery and Chemical Corp., New York, retired after many years in the pesticide field. He said he would remain as a consultant for the firm, however.

The Western Cooperative Spray Project Conference was held at Portland, Ore., as was the fifth annual Northwest Agricultural Chemicals Industry Conference. Speakers emphasized the high cost of research that must be part of developing a chemical for agricultural use.

The annual pesticide school at North Carolina State College, held in January, heard talks on insect control problems, and a plea for closer cooperation between colleges and the pesticide industry.

Sinking of a potash mine shaft in nine months set a record when the Farm Chemical Resources Development Corporation's new mine was sunk in New Mexico. The shaft's maximum depth was 1,697 feet.

A new fertilizer firm, Basic G Industries, Inc., started operations at Houston. Plant capacity is 60,000 tons a year. The output will be distributed through 150 dealers.

The American Medical Assn. proposed a new model law covering labeling of "dangerous" chemicals. The proposal was a start toward uniformity in all states.

"Pest-O-Rama," a two-day pesticide conference at Montgomery, Ala., attracted thousands of people from the state to see exhibits, listen to talks by entomologists and others in the insecticide trade, and to learn more facts about the importance of pest control.

The Weed Society of America in its January meeting at Memphis, reported that weeds cost the American economy some $5 billion annually. Some 35 million acres were sprayed for weed control during 1957, the convention was told. Of this total, some 12 million acres were in corn. Dr. A. S. Crafts, University of California, Davis, was named president of the National group.

Iowa reported that only 7% of the farmers in that state applied insecticides to control corn borer, whereas 88% of the Iowa crop was infested with the insect. Another "severe" infestation was predicted for the 1958 season.

The value of early season control of cotton-infesting insects was stressed at the Mississippi Insect Control Conference held at State College, Miss.

A $200,000 superphosphate plant near Littlefield, Texas, was begun in January. It will be known as the Caprock Fertilizer Co., owned by Longhorn Construction Co., Sulphur Springs, Texas.

A new relatively non-toxic insecticide was discovered by USDA workers. It was claimed to have less toxicity than either pyrethrum or allethrin, but was slower in "knockdown" of insects.

Connecticut Valley tobacco growers have found their market for high grade leaf products to be drastically reduced because of new methods of cigar manufacture in which high quality plants are not necessary.

The Food and Drug Administration denied application for setting a tolerance of methoxychlor residue in milk. Thus, the product will not be used as a space spray in dairy barns, but may be dusted on cattle.

The U.S. Department of Agriculture struck back verbally at the charges made in a New York Times editorial that USDA was acting in an irresponsible manner in the fire ant eradication campaign. A spokesman for the Department said that domestic Tom cats killed more birds than would this entire campaign. The USDA also denied that it was "plunging ahead blithely" as the newspaper said, and declared that the entire program was planned with the cooperation of conservation and zoological officials and representatives of the fish and wildlife service.

Dr. S. N. Fertig, Cornell University, was elected president of the Northeastern Weed Control Conference at the group's annual meeting in New York. Jack Dreessen, herbicide expert for the National Agricultural Chemicals Assn., Washington, briefed the group on legislative and statutory limitations on the use of herbicides.

The U.S. Bureau of the Census reported that production of anhydrous ammonia during October, 1957 was greater than that of the same period of the previous year. Other chemical products showing gains over October, 1956, were ammonium nitrate, lead arsenate, nitric acid, phosphoric acid, and sulfuric acid.

Plans for the erection of a new superphosphate manufacturing plant in Canada were announced by Dominion Fertilizers, Ltd. at Port Maitland, Ont. The plant was expected to be producing early in the summer of 1958, the announcement said.

The cotton crop of 1957 was reduced by some 12% due to plant disease activities, the National Cotton Council reported. The 1957 disease toll was more than 1.5% higher than the average of losses for the period 1952-56, it said.

CORN PROGRAM PARTICIPANTS—Typical of the top participants in Spencer Chemical Company's "Efficient Corn Growing Program" are these two Missouri vocational agriculture students, Seth Jones (pointing) and John Wortmann, both from St. Charles, Mo. At left is their instructor, Harold Landwehr. Seth and John were among the more than 2,000 participants in Spencer program which stresses "learning by doing" in the efficient production of corn. Average yield of all participants completing the program this year was 99 bu. per acre on an acre plot where "new" practices were used as contrasted to 77 bu. on a check plot where "normal" practices were used. As shown in the picture Seth and John beat the average on their "new" plot, getting 101 bu.

WEED CONFERENCE OFFICIALS—Dr. Richard Behrens, extreme right, of College Station, Texas, is the new president of the Southern Weed Conference. Dr. Walter K. Porter, Jr., second from left, of Baton Rouge, La., is secretary-treasurer; and Dr. John T. Holstun, extreme left, of Stoneville, Miss., and Dr. E. G. Rodgers, second from right, of Gainesville, Fla., are conference representatives to the executive committee of the Weed Society of America. V. S. Searcy of Auburn, Ala., who was made vice president of the conference, was not present at the meeting, held recently in Memphis.

Most Damaging Weeds In California Listed

SACRAMENTO, CAL.—A survey of farm advisors in California counties shows they consider the pest water grass to be among the most economically damaging of all annual weeds in valley areas.

Among the perennials, they named wild morning glory as the most troublesome with Johnson grass and Bermuda grass close behind.

The four weeds are, by far, the most damaging in irrigated areas of California's farmland. Others named by the farm advisers as needing control measures are pigweed, lamb's quarter, wild oats, mustard and ouncture vine among the annuals, and nut grass, cattails, tules and other aquatic weeds, Canada thistle, Russian knapweed and whitetop among the perennials.

OSCAR & PAT

(Continued from page 17)

out calling on farm to farm and try to be serious, I don't sell a darn thing. Friendliness counts, I guess. People seem hungry for it."

Oscar Schoenfeld left for lunch at 11:30, without saying a word.

When Oscar got to his neat bungalow type home, he entered by way of the front door instead of via the kitchen. As Minnie, his wife, came hurrying forward, surprised to see Oscar at the front door, he beamed and thrust six beautiful red roses into her hands.

"For you, my good frau," he said, kissing her cheek and waltzing past to the kitchen where he whistled as he washed his hands.

Then he came to the dining room and exclaimed, "Ah, Minnie, how wonderful—sauerkraut and spareribs. What a wonderful cook you are!"

As one stunned, Minnie, black hair in a knot at the back of her head, came forward. She laid the flowers on a sideboard, "Oscar," she asked suspiciously, "What have you done?"

"Done!" Oscar dropped his fork and looked at her. "Nothing, except bring you flowers. What's wrong with that?"

"It's not like you," Minnie said, still suspicious. "Let me smell your breath!"

There was a moment of intense silence, then Oscar said bitterly: "Yes, I've done something. I've tried to act like McGillicuddy. He says if you are gay and friendly, people like you and buy more from you. But when I act like that, you get suspicious. I'm not like McGillicuddy. I'm Oscar Schoenfeld. I am what I am, I guess, and I'd better be satisfied."

And silently he wound a big wad of sauerkraut around the highly polished fork.

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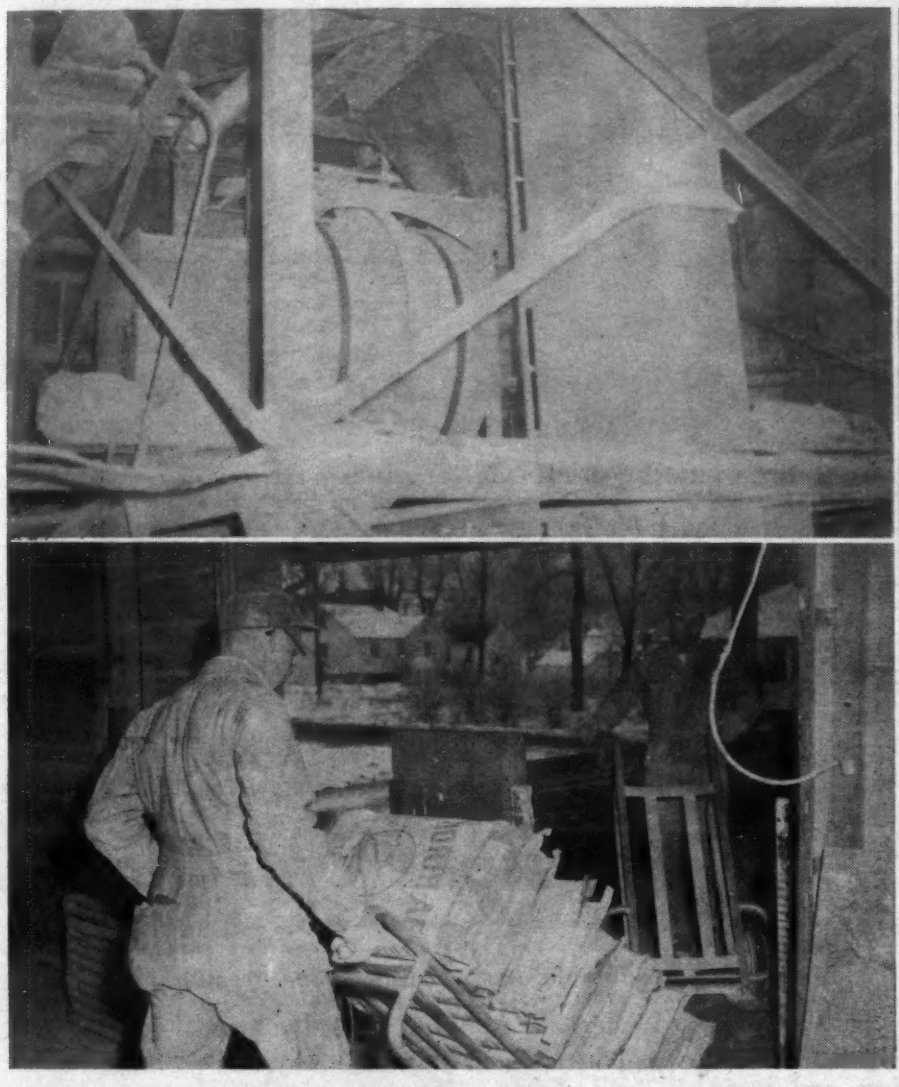

UNCONVENTIONAL GRANULATOR—Top row, left, is one-ton mixer at Eymann Fertilizer plant, Forest City, Iowa, which is key to the firm's process of making granulated fertilizer with a minimum of special equipment. Special sparger inside mixer distributes solutions and acid in process. At right, firm's sales manager, Don Norvet, holds handful of granulated 5-20-20 for inspection by Lewis Eymann, owner of the company and inventor of the granulation process for which patent application has been made. In the lower photos are truck-loading operations in which a dealer has driven in for a supply of 5-20-20, and at the right is the firm's soil-testing laboratory with Miss Jeanette Mitchell checking a sample, one of some 8,000 a year made by the laboratory.

UNIQUE PROCESS . . .

Granular Fertilizer Made In Conventional Mixer by Midwestern Manufacturer

FOREST CITY, IOWA—A fertilizer plant which produces granular material, with a minimum of equipment usually associated with granular manufacture, is operated in Forest City by Lewis Eymann. In production for over a year, his patented "Eymann process" is turning out 12-12-12, 5-20-20, 5-20-10, 10-10-10 and other grades daily for farmers in a marketing area of around 100 mile radius.

A trip through Mr. Eymann's plant in this northern Iowa town gives a visitor the impression that this is just an ordinary fertilizer mixing plant, with a conventional mixer, material handling devices, scales, bagging equipment and storage areas. The difference, however, is evident in an inspection of the material in storage bins. A handful of the mixed goods reveals that it is granular with a high degree of uniformity. Yet the equipment usually found in granular plants is missing. No drier, no other special devices appear. How come?

Mr. Eymann's process makes it possible, he says, for a conventional fertilizer mixer to switch to granular manufacturing by utilizing most of the equipment ordinarily found in mixing plants and adding to it a minimum of other machinery to produce a granular product. An increasing number of plants in various parts of the country are producing good quality granular material with this process for which patent application has been made.

The heart of the unique process for making granular materials is the new-type sparger which controls distribution of both acid and solutions uniformly. The simplicity of the process, the inventor says, enables a manufacturer to use unskilled help with good results both from the standpoint of production and quality of the product.

This plant has no provisions for recycling the product, nor has it any screening arrangement. Yet, the product is uniform, with the granules being minus 8 to plus 16 mesh for the most part. The plant's mixer which was originally built to produce pulverized material, now acts as the ammoniator-granulator, and the drag chain which removes the newly-granulated materials has a beneficial effect in lowering temperature and moisture while the material is being carried to storage bins.

At the Forest City plant, solutions arrive by tank car which is spotted on a siding adjacent to the plant, and its contents are piped directly to a weigh boot and from there to the mixer. The car, which usually remains on the siding for "three or four days" functions as a storage tank which does away with the necessity of having storage facilities installed at the plant. Acid, on the other hand, is stored in a tank at the plant.

Superphosphate and potash in granular form are purchased from a number of suppliers, and these high quality raw materials provide the basis for the operation.

Quality control is maintained at all times with commercial laboratories testing the finished products against the guarantees on labels. Reports from these tests, Mr. Eymann says, indicate a consistent high quality. On the other hand, every precaution is taken to prevent excessive overages which in the case of high analysis goods, "take too much of the profit," as the manufacturer said.

The Forest City plant's more popular product is a 5-20-20 grade, which comprises 65% of the total output. A grade of 5-20-10 is the second in demand, with a 10-10-10 third. A loyal group of farmers throughout the marketing area served by the company is being built up by an increasing number of dealers selling North-Ag brand fertilizers. These dealers, "quite a few" of which are exclusive for the company's products, are urged constantly to merchandise fertilizers and are encouraged by every possible means to make sales in the off-season.

As a result, about 25% of the firm's total volume in 1956 was sold and applied in the fall of the year, but the wet fall experienced by farmers in the area in 1957 cut down that figure somewhat. Mr. Eymann is not discouraged by this eventuality. "The farmers in this area are sold on the idea of putting on fertilizer in the fall and winter months, and they'll be back for more this fall if the weather is at all suitable," he commented.

As a matter of fact, on the level fields of northern Iowa, hundreds of farmers apply fertilizers on top of the snow and are well satisfied not only at the convenience of completing this work when they are not being rushed with other things, but also with the results in terms of crop yield. Mr. Eymann noted, as he looked out on the January snow scene from his office, "In fact, our trucks are out applying granular fertilizer today . . . we have very little farmer resistance to the idea of winter application."

One does not have to be around the Eymann organization long before gaining this impression: here is a firm that believes in service. In fact, service has been the background of the company's owner all of his business life. Brought up under the influence of his father who has been an auto dealer for years, plus further experience at operating a retail farm equipment firm, he realizes that to make a business prosper, service must be a keynote of the operation.

This conception of how to operate was dominant right from the start when the plant opened in 1954. "We were neophytes in the fertilizer business," Mr. Eymann confides, "but we figured that selling plant food would require the same type of service that is needed to sell cars and implements in the face of strong competition. So we organized our operation along that line and have seen a steady increase in business every year we've been operating."

A partner in the fertilizer firm, Don Norvet, assumes the chief responsibility of service to the dealers served in the 100-mile business radius of the company's operations. With North-Ag since its beginning, Mr. Norvet has traveled thousands of miles through the area offering sales and service help the year around. He calls only on dealers, since the manufacturer's policy is not to sell direct to farmers.

One of the services which has helped to boost volume is the plant's soil-testing laboratory which last year processed some 8,000 samples. Of the farmers who had soil tests last year, 97% bought their entire supply of plant food from North-Ag dealers. "One extra advantage we've noticed in the soil-testing service is that not only do the farmers remain steady customers, but the tests reveal the need for greater amounts of fertilizer than they had realized. This, of course, increased the tonnage bought by these customers," the plant owner observed.

The extra sales push, offering of granular fertilizer materials, the loyal an aggressive dealer organization, all add up to a healthy growing business for the Eymann firm.

"When I can get a premium price per ton for granular material without having had to invest many thousands of dollars in special equipment to make it, the profit margin is much more favorable than would otherwise be the case," the manufacturer commented.

Created for the Dealer Who is TOO BUSY WITH OTHER THINGS...

CSC Hi-D

AMMONIUM NITRATE PROGRAM FOR 1958

Know anybody busier than you? We don't!

Our whole advertising and sales promotion program is realistically based on the fact that you've got a lot of other things to sell besides nitrogen fertilizer. Mixed fertilizers, for instance. And a store full of other things, too.

We'll give it to you fast – item by item. See if you don't agree that it all adds up to *more sales* of Hi-D Ammonium Nitrate with *less work* on your part.

ADVERTISEMENTS
They say "see your dealer." Emphasize importance of mixed fertilizers. Running in key farm magazines. They reach out and pull in the farmers in your backyard. Tell the complete new Hi-D story.

POINT OF SALE
A wall sign that billboards Hi-D right in your store. A counter display that shows Hi-D in action plus a compact new Hi-D sample display. Window banner that tells 'em outside to come inside for new Hi-D.

LITERATURE
Folders that tell the whole Hi-D story for you. For hand out and mailing to your customers.

NITROGEN THE HEART OF THE HARVEST

It's Easy To See That It's Easier To Sell

Hi-D AMMONIUM NITRATE!

NEWSPAPER MATS
Eye-catching ads all done for you – ready to run in your local paper, alone or as part of a larger store ad.

SAMPLES AND TECHNICAL DATA
Sample bottles of Hi-D – a time-saving way for your customers to see for themselves. Technical data sheets that give you the facts fast to keep you up to date on Hi-D developments.

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COMMERCIAL SOLVENTS CORPORATION

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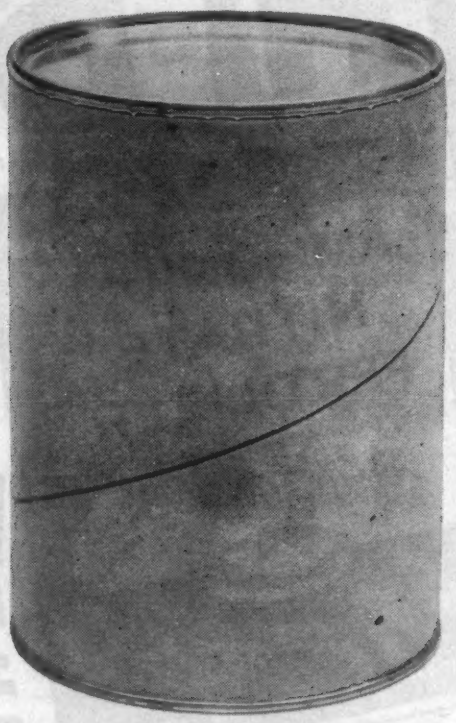
7890 FOLK AVE., ST. LOUIS, MO. • TERRE HAUTE, IND.

CLEAN RECORD—Employees of the Albert Lea, Minn., plant of the Smith-Douglass Co., were recently presented an award for having completed 698 days without a lost time accident. Harvey Botten, left, president of the Albert Lea Safety Council, presented the certificate to, left to right, M. W. Mawhinney, plant manager, R. D. Ausen, superintendent, Henry Lovik, R. H. McNeese and Oliver Jensen, members of the plant's safety committee.

KALO can put *your* label on this can of inoculants and allow you and your dealers the greatest mark-up in the industry!



let KALO quote on your private label inoculants

by Myron E. Lusk, President and Research Director
KALO Inoculant Company

Did you know that legume inoculants can be the most profitable line of products you and your dealers sell? For example, if we pack a private label inoculant line for you, your mark-up can range as high as 48% to 51%! Where else in this business can you make money like that?

Write me today and let us tell you how we can produce your private label inoculants at prices that will make you wonder why you didn't switch to a KALO private label years ago. Clip the coupon below and attach it to your letterhead. I'll send you a sample can from our private label line!

Mr. Myron E. Lusk, KALO INOCULANT COMPANY,
Quincy, Illinois.

Please send me a sample can from your private label line of legume inoculants.

Name_____

Title_____

KALO INOCULANT COMPANY, Quincy, Illinois

Freight Rate Hike Suspended in Canada

TORONTO—In an unprecedented move, the Board of Transport Commissioners for Canada suspended an increase in Canadian freight rates on export-import rail traffic tied to a U.S. increase.

The increase, which originally was due to become effective Feb. 1, was postponed until Feb. 15, and has now been suspended indefinitely pending board hearings scheduled to start in Ottawa March 31.

Many protests have been made against the proposed 6¢ per 100 lb. (originally 10¢ 100 lb.) to be levied against export and import shipments through Canadian ports on most items, although bulk goods, such as grains, were excluded from this charge.

From ICC, U.S. railways received authorization to increase a series of freight rates that include those on export and import traffic through eastern and western ports. It has been customary for the board to grant similar increases in order to keep Canada and U.S. port rates at a semblance of parity to avert cut-throat competition for business.

Salesmen Form New Selling Organization

ST. LOUIS—Three well known bag industry representatives who have worked for Fulton Bag & Cotton Mills of St. Louis for at least 25 years have completed plans to form a new selling organization to be known as Mid States Sales, Inc. The men are A. W. Moenkhaus, R. E. Obermiller and E. F. Walthers. Mr. Walthers has served Fulton as pricing director and sales correspondent for more than 40 years.

The new organization will continue to represent Fulton Bag and Cotton Mills in the St. Louis territory from offices located here at 2725 Clifton Ave. Representatives of the new firm will sell the same line of bags as they have in the past, with textile bags manufactured and shipped from the Fulton plant in Atlanta, Ga.

Vegetable Production Changes Suggested

BRIGHTON, COLO.—Vegetable growers of the South Platte Valley of Colorado were told that they must coordinate their production and marketing to meet the needs of large-scale buyers if they are not to continue suffering economic losses.

The advice was given by Dr. Irwin W. Rust, Washington, marketing specialist of the U.S. Department of Agriculture.

He was on the opening day program of the fourth annual Brighton Agricultural Institute being conducted in the 4-H building at the fairgrounds here.

Frontier to Increase Benzene Hexachloride Price

WICHITA, KANSAS—Frontier Chemical Co., division of Vulcan Materials Co., Wichita, has announced a price increase in technical benzene hexachloride.

Effective April 1, 1958 their price will be $0.00825 lb. gamma unit, freight allowed in truckload or carload quantities to any U.S. destination. This price applies to both high and low gamma BHC and includes export as well as domestic business.

During March, Frontier will accept orders at the present price of $0.0075 per lb. gamma unit to the extent of available inventories.

MONSANTO APPOINTMENT

ST. LOUIS—Matthew S. McCauley of St. Louis, director of business research for Monsanto Chemical Co.'s Organic Chemicals Division here, has been appointed director of marketing research for the division.

New Store Location

PASCO, WASH.—The first store to sell an irrigation system in the Columbia Basin has opened at a new location here. Earl Wattenburger, Columbia Grain and Feed Co. owner, has moved his firm into newer and more spacious quarters after being in business 21 years in the same place. Mr. Wattenburger, a native of Heppner, Ore., moved to Pasco in 1937 and opened the Columbia Feed and Seed Co. The new quarters include more than 8,000 square feet of floor space. A new warehouse will provide an additional 6,000 square feet. The firm offers a complete line of farm and garden supplies.

FLORIDA SALES

TALLAHASSEE, FLA.—Florida fertilizer consumption during January totaled 133,914 tons, according to the Florida Department of Agriculture. The total included 103,847 tons of mixed goods and 30,067 tons of materials.

Bigger Pay Loads Economical Hauling Low-Cost Storage

. . . are yours with

Dallas NH_3 Equipment

Dallas NH_3 Transports of 85,000 and 105,000 psi tensile steel for big, low-cost loads.

Single and double barrel Dallas NH_3 Truck Tanks for low-cost operation.

Dallas NH_3 Storage Tanks from 1,750 to 30,000 WG, x-rayed and trouble-free.

Call, write or wire Dallas Tank Company, Inc. today for details on any NH_3 equipment.

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West Virginia Pulp Manufactures New Stretchable Paper

NEW YORK—A stretchable paper product said to have unusual strength has been developed by West Virginia Pulp & Paper Co. under a patent held by Cluett, Peabody & Co., Inc., and now is being produced commercially.

The new paper is being manufactured on a new $25 million paper machine at the company's Charleston, S.C., mill, capable of producing up to 225 tons a day.

Trial runs of the paper have been carried out for a month on the Charleston mill machine, which is equipped with an extensible processing unit and is designed to make a sheet 20 ft. in width at speeds ranging up to one-half mile a min. Sanford Cluett, the man responsible for the shrinkage process behind the Sanforized trade mark, conceived the basic idea for extensible paper of this type.

Licensing rights will be extended to other paper manufacturers through a new company, Clupak, Inc., organized jointly by West Virginia and Cluett, Peabody.

The first Clupak papers being sold commercially are kraft grades to be used primarily in the manufacture of multi-wall sacks; specialty bags, including supermarket check-out bags; wrappers, and other kraft packaging products, and in numerous industrial applications where unusual strength is required. These grades will be marketed as Kraftsman Clupak paper.

West Virginia officials state that an increasing amount of the new stretchable paper will be available in the coming months as more of the company's machines are equipped with an extensible unit and as other paper producers are licensed to manufacture the new product. Installations of extensible units have already been planned for a second large paper machine at the company's Charleston mill and for a small specialty machine producing white papers at the company's Luke, Md., mill.

Wisconsin Sales Show Slight Gain

MADISON, WIS.—Fertilizer sales in Wisconsin during 1957 totaled 410,597 tons, a .58% gain over 408,221 tons in 1956, according to the Wisconsin Department of Agriculture.

The breakdown of 1957 sales, with those for 1956 in parentheses, shows:

Complete mixed goods 293,580 tons (308,180), phosphate and potash mixtures 77,065 (69,049), superphosphates 4,978 (3,282), other materials 35,153 (27,710).

The 1957 total included 16,610 tons of bulk delivered dry mixtures and 3,027 tons of bulk delivered dry materials.

Grasshopper Conference Held at Regina, Sask.

REGINA, SASK.—A grasshopper control conference Feb. 21 at Regina, Sask., was held to discuss plans for combatting the expected grasshopper outbreak in 1958. About 200 delegates from 116 municipalities in the 1958 grasshopper forecast area attended.

Federal agriculture department entomologists presented detailed information on surveys conducted last fall and control measures.

New Board Members Named

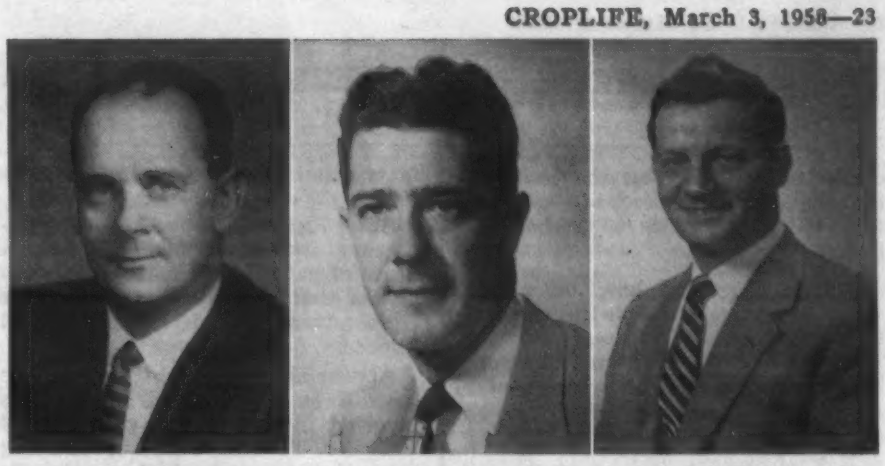
RICHMOND, VA.—David K. Wilson of Nashville, Tenn., president of Cherokee Insurance Co., and Oliver Russell Grace, a partner in the New York securities investment firm of Sterling, Grace & Co., were elected to the board of directors of Virginia-Carolina Chemical Corp., Jan. 27. At the same time, the V-C board announced the election of Russell L. Haden, Jr. as vice president and Richard E. McConnell as treasurer.

Mr. McConnell, secretary of the company since 1956, succeeds Irving D. Dawes, who retired at the end of last year after 27 years with the firm.

Mr. Haden, who was named general manager of the chemicals division in December, was general manager of the organic chemicals division of Dewey & Almy Chemical Co., Cambridge, Mass., before moving to V-C to succeed Edwin Cox, who retired as vice president for chemicals.

WIN ARKANSAS CONTEST

LA JUNTA, ARK.—Two neighboring Crowley County farmers were honored for winning the top places in the Arkansas Valley corn and sorghum production contest. Harry Clinger of Ordway was first in corn production with a yield of 166 bu. per acre, while his adjoining neighbor, Jim Peters, took the top place in the sorghum contest with a yield of 128 bu. per acre.



Bill Sheets | P. E. Nelson | K. L. Moore

SALES MANAGERS—Three new territory sales managers have been appointed for the paper bag division of Chase Bag Co. They are Bill Sheets, appointed midwestern sales manager in Chicago; P. E. Nelson, southwestern sales manager, Atlanta; and K. L. Moore, eastern sales manager, Buffalo. Mr. Sheets became a specialist for Chase multiwall sales about a year ago. Mr. Nelson joined the company in 1938, and since 1956 has been manager of the New Orleans sales office. Mr. Moore joined the firm in 1956 as a multiwall sales engineer in Buffalo.

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TENNESSEE CORPORATION
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OF FERTILIZER CHEMICALS
We have manufactured nutritional trace elements and maintained a consistent research program covering these materials and their application to fertilizers for more than thirty years. Our background and basic position in this field is your assurance of a plentiful supply of quality materials.
YOU cut cost with combined carloads from one basic source.
YOU can save money, time, plant space and effort through the use of our custom formulated mineral mixture service.
WE back up our products with service, research and technical assistance.
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NUTRITIONAL TRACE ELEMENTS ARE OUR BUSINESS
Foliar Nutritional Products Include NU-IRON
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NITROGEN CONFERENCE

(Continued from page 1)

on investment" so that the fertilizer industry will "become of age and take its proper place as a chemical industry.

"Service selling—how much to use, when and how to apply for greatest profit, is of real value to the farmer," the California agronomist went on. "Such service costs money, but it makes profits for the farmer."

That the University of Minnesota has a great interest in being on the team to put soil fertility facts to work on the farm was emphasized by Dr. Harold Macy, dean of the College of Agriculture, and reiterated by Dr. William P. Martin, head of the soils department of the University. Dr. Martin described the major role played by research in finding out new facts about fertilizer use and application.

Skuli Rutford of the University extension staff described the importance of getting information to farmers so that the latter might benefit from advances made in agricultural science.

Appearing on a panel to discuss the parts to be played by various persons involved in the sale of plant food were Dr. Proctor Gull, representing the point of view of the materials supplier; and F. E. Hartzler, Kansas State Teachers' College, Emporia, on the role of the dealer. The viewpoints of a farmer and a banker were also presented on the program.

In his talk on the dealer aspect of the situation, Mr. Hartzler said that the dealer is the most important man in the fertilizer selling chain, since it is his responsibility to "separate the customer from the cash." Because of this, Mr. Hartzler said, the dealer is entitled to a good profit. This means that the dealer must not only sell fertilizer, but he must sell the value that he himself can add to the product.

Mr. Hartzler said this can be done in two ways: through the dealer's outstanding knowledge of the product, and employing the emotions of the prospects to work toward greater use of fertilizer. As an example, the speaker said that one does not "shop around" very extensively for the very cheapest doctor available when an operation must be performed. Rather, the best and most skillful man is sought. "What you are really paying for is the confidence that you personally have in the physician. This confidence is real, very real, and it comes from something intangible."

Emotional reasons for purchasing an article play an important part in making a sale, he pointed out. "Unfortunately," he said, "scientific knowledge and reasonable proof will not move the average mortal to fall two inches downhill off a flat rock."

Because of these facts, the speaker said, we must examine the human being. "The reason why fertilizer is not being used by every farmer is not the lack of scientific knowledge, but the fact that the farmer's emotions have not been aroused." He urged the industry to employ the known sales tools used successfully in other fields wherein the emotions are aroused to appeal to the prospect's desire for getting ahead, and to convince him through expert opinion on the material for sale.

Dr. Martin was chairman of the sessions of Friday, Feb. 21. Dr. George D. Scarseth, director of the American Farm Research Assn., Lafayette, Ind., told the assembly that using more nitrogen fertilizer could become the "easiest of all production practices to sell" to farmers. To make this possible, he added, farmers need to be convinced to follow top management practices for efficient and low cost production.

"There is much evidence to show the profitableness of using adequate nitrogen in balance with other top practices to lower the cost of production," Dr. Scarseth said. "Lowering the cost of production is one way to broaden its acceptance in the market."

He pointed out that lack of nitrogen is one of the first limiting factors in crop growth in the Midwest. "We have built a highly productive agriculture based on mining our soil for nitrogen, a capital wealth which was really inherited from virgin land," he said. "Legumes have tended to delay this day of nitrogen starvation, but they have taken their expensive toll in depleting our soils in phosphorus, potassium and other mineral elements.

"Therefore, we can no longer depend on inherited nitrogen from organic matter and in many places it will not be economical to depend on nitrogen from legume sources."

Stating the need for nitrogen on Midwest soils, Dr. Scarseth said in 1954, average nitrogen use per crop acre by states was: Minnesota, 3.5 lb.; Wisconsin, 4; Illinois, 6.9; Ohio, 10.8; and Indiana, 14. This use, he stated, was "hardly a drop in the bucket."

E. L. Schmidt, soil microbiologist at the University of Minnesota, told the conference that farmers need to keep in mind when adding nitrogen fertilizer, that some of this nitrogen may be used or changed by soil "microbes" in converting soil residue to useful soil organic matter.

"To convert a ton of cornstalks into organic matter, some 30-40 lb. nitrogen is needed and the residue itself contains only about 10 lb.," Mr. Schmidt said. "The deficit must come from the soil or must be added as fertilizer. Soils well supplied with nitrogen may easily meet these demands of the soil life. But soils low or moderately low in nitrogen will need fertilizer nitrogen to insure rapid breakdown of the cornstalk residue and to insure against nitrogen shortage for the growing crop," he added.

Dr. A. C. Caldwell, soils scientist at the University of Minnesota, reminded the group that emphasis on the need for additional amounts of nitrogen should not cause the farmer to overlook the importance of phosphate, potash and lime. The soils containing a well-balanced supply of all of these nutrients return the biggest dollar profits to the farmer, Dr. Caldwell said.

The role of lime was mentioned by Dr. Caldwell as being equally important with the plant nutrients in soils where too much acidity is found. If the soil is too acid, some nutrients such as phosphorus, are fixed in an

(from left to right) Mr. Jude Grimes, his sons Ike and Dave, of Russellville, Indiana. The healthy and vigorous growth of their corn, fertilized with AMMO-PHOS 11-48-0, is clearly shown by the sturdy stalks and wide leaves.

They proved it . . . AMMO-PHOS

11-48-0 *best starter for corn!*

"11-48-0 or 5-40-0 . . . which is the best corn starter to go along with a fall plow-down of potash and a pre-plant application of nitrogen on our 300 acres of hybrid seed corn?" To find out, Mr. Jude Grimes and his two sons, Dave and Ike, in 1956 used 5-40-0 on 150 acres and AMMO-PHOS 11-48-0 on the other 150 acres. 125 lbs./acre of each was banded two inches below and to one side of the seed. The difference between the two starters was considerable. The corn planted with the AMMO-PHOS 11-48-0 matured earlier and averaged 10 bushels more per acre than that planted with the 5-40-0. Both adjoining 150-acre plots received 250 lbs. of potash plow-down and 110 lbs. pre-plant nitrogen per acre, as well as similar pesticide treatments.

"The extra nitrogen of the 11-48-0 probably helps, but I am convinced that the greater amount of available water-soluble phosphorus in 11-48-0—nearly half again as much, an agronomist told me—really accounts for the difference between the two starters," comments Mr. Grimes.

☆ ☆ ☆

The Grimes now use AMMO-PHOS 11-48-0 exclusively as a corn starter. For bigger corn yields, you can do the same. Why not get the full details from your Mathieson Dealer today?

AMMO-PHOS Fertilizers . . . Anhydrous Ammonia . . . Pesticides . . . Irrigation Systems

AMMO-PHOS® is a trademark

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PLANT FOOD DIVISION • LITTLE ROCK, ARKANSAS

5583

unavailable form. Even if additional phosphates are applied, these become unavailable very quickly also.

A panel discussion on the role of nitrogen in production potentials was presented on Friday afternoon, Feb. 21. In his talk on corn production, Dr. J. M. MacGregor, Minnesota soils scientist, said that farmers looking for ways to avoid the soft corn problem won't help it any by applying less nitrogen. Field tests, he reported, indicate that average ear corn moisture in late September is about the same in corn receiving heavy nitrogen doses as it is in corn getting either no fertilizer at all or a no-nitrogen fertilizer.

In 1955, he reported, unfertilized corn was compared with that from plots receiving rates of 60, 120, 180, and 300 lb. nitrogen an acre, alone and with 40 lb. each of phosphate and potash to the acre. None of the fertilizer rates changed the corn moisture percentage by more than 1%.

However, proper fertilizing can help avoid the soft corn problem, Dr. MacGregor declared. Excessive moisture often results from corn freezing before it matures. Corn plants receiving adequate plant nutrients will grow faster and therefore will be more likely to get ripe before the first frost, the speaker reasoned.

R. A. Young, agronomist from the North Dakota State College, Fargo, appearing on the panel, said that by using more nitrogen and eliminating the summer fallow, farmers in many areas of the Upper Midwest could increase grain yields by a third or more. He said that yields of small grains are "considerably below potential levels" in the area. The supply of nitrogen in the soil is one of the many controllable factors.

Mr. Young noted that only 10% of the wheat, 4% of oats and 16% of barley grown in North Dakota received any fertilizer in 1954. Since that time, he reported, application of plant food has increased percentagewise, "even so, very little is used in relation to what could be used profitably."

Laurie Peterson, Midland Cooperatives, Inc., Minneapolis, presented a six-point "success formula" which fertilizer manufacturers and dealers can follow to increase nitrogen sales.

In explaining the plan, he said "a certain amount of teamwork is necessary to achieve our common objective. The fertilizer manufacturer is really the 'captain' of the team, with many responsibilities."

The most important link in the distribution team, Mr. Peterson said, is the fertilizer dealer, because he makes contact with the farmer.

The fertilizer dealer program he offered included these points:

1. Offer a complete fertilizer service, including bagged fertilizer, bulk fertilizer spreading service, and side-dressing or a preplant program with either ammonium nitrate, nitrogen solutions or anhydrous ammonia.

2. Sell a sound fertility program. This includes promoting soil tests, planting adapted seed varieties, stepping up corn plant populations, liming where necessary, fertilizing according to soil test, controlling insects and weeds and applying pre-plant or side-dress applications of "straight nitrogen" material.

3. Set up a training program for dealers, employees and salesmen, so they understand the products and how to help farmers get maximum return from their fertilizer dollar through wise use.

4. Advertise, by following up fertilizer company advertising with local advertising.

5. Merchandise the material in the store, with fertilizer displays, bulletin boards, taking orders in advance, keeping card files for each patron.

6. Set up demonstration plots to sell fertilizer.

A tour of the St. Paul Ammonia Products nitrogen plant was made by the group on Saturday morning, Feb. 22, and a series of exhibits were set up at the meeting room in Hotel Lowry during the 3-day conference. The displays, telling the story of nitrogen and other fertilizer elements from manufacture through new materials and technology, application and use to the various actions in soils, stressed the economic considerations involved. These displays were set up by nitrogen producers serving the Upper Midwest area.

An industrial sound-and-color movie produced by Standard Oil Co. was presented to the group. It covered the subject of nitrogen from its manufacture, through application and its results in greater yields and profits. Time-lapse photography was employed to reveal sharp contrasts between the fertilized and unfertilized plants in their growth patterns.

The group also visited the new soils building on the University of Minnesota campus. Although not yet ready for occupancy, the various laboratories and classroom facilities were open for inspection so the visitors could get a comprehensive picture of the setup.

NIAGARA

(Continued from page 1)

made its mark on the landscape in other ways in bygone days, with many early plantation tenant houses in the area having roofing and siding made from Niagara calcium arsenate drums.

A dust plant formulating special mixtures for cotton farmers in the mid-south and fruit growers in the midwest was operated at Greenville from 1944 to 1954. DDT and the other new organic pesticides were unknown when this plant began operations. Since 1954, however, dusts have been produced at Belle Chasse, La., and liquid pesticides at Pine Bluffs, Ark. for the mid-south.

Horace W. Lee

the MULTI-SPREAD* PROCESS *means . . .*

☆ CUSTOM TAILORED PLANTFOOD

☆ BETTER SERVICE ☆ MORE PROFITS

IN *YOUR* FERTILIZER OPERATION

☆ *PLUS . . .*

☆ UNIFORM DISTRIBUTION

☆ 25% GREATER VOLUME

☆ ECONOMICAL OPERATION

☆ ACCURATE SETTINGS

☆ PRECISION METERING and MIXING

THE MULTI-SPREAD* DELIVERS ANY QUANTITY AND ANALYSIS SELECTED; DOUBLES AS STATIONARY BLENDER

The MULTI-SPREAD offers you unequalled uniform distribution over a 30-foot spread with *four* slow-speed distributor fans. A simple, 60-second setting method is combined with precision metering and mixing of from one to three materials at rates of from 25 to 1,000 pounds per acre. Basic fertilizer materials are dispensed separately or in any combination from one or all bins. Spreader booms fold neatly into the sides of the unit permitting quick change from road to field position without lifting. And the unit is quickly switched to a fast, efficient portable blender or may be used as a stationary blender with output in excess of 10 tons per hour for planter attachment, drills or other side-dressing equipment. A portable, rear-delivery elevator is now available.

DEALERSHIPS AVAILABLE

There are still some desirable dealerships available in selected areas

HERE'S WHAT USERS SAY:

" . . . We are convinced that no other system could offer the uniform spread, the versatility, nor the savings to the farmer which your spreader makes possible . . . "

" . . . The Multi-Spread is a revolutionary advancement in the fertilizer industry and a boon to agriculture . . . "

" . . . Once the farmers see the accurate job of application of fertilizer that this box does they specifically request that we use it instead of our other box . . . "

" . . . What spreading we have done is far superior to the spreading done with the old-type spreaders . . . "

" . . . Regardless of our requirements, this new machine has put it on in one single application . . . "

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The regional circulation of this issue is concentrated in the Midwestern states.

AS SCIENCE ADVANCES . . .

Let's Not By-Pass Agricultural Know-How

Fears have been expressed by many people in agriculture that the current emphasis on "science" in schools, colleges, and universities may result in a trend away from agricultural learning to the severe detriment of the country a few years hence. While there is no quarrel with the apparent need for mathematicians and physical scientists, we want to be sure that agricultural science is not given a secondary role as the battle for bright young people continues in the years ahead.

It would be a short-sighted policy indeed to cut down on agricultural research and to stymie progress in the direction of more efficiency on the farm. Despite the fact that surplus materials are the bane of the economist at the present time, the day is approaching when the rapidly-growing urban population of the nation will consume more agricultural goods than ever before. Distracting young people from the "agri-business" world may prove to be an unwise move, but one that might not show up for some years.

Among the authoritative voices raised in advocating a vigorous effort in technical advancement in agriculture is that of Earl O. Heady, Iowa State College agricultural economist, who told a recent conference at Kansas State College that the current world political situation requires that America maintain rapid technical advance in agriculture as well as in other sciences.

"Our might depends upon the effectiveness with which all of our resources can be utilized, as ultimately expressed in the productivity of our labor force, aligned as it is against a major proportion of the world's manpower in eastern Europe and Asia," Mr. Heady said. "Productivity of agricultural labor looms large in this realm."

The Iowa State College economist also noted that respect of a world population which is hungry to a large extent, "grows from our ability to produce food abundantly. Here is an important realm in which we have an important lead." He suggested that America make as much of this accomplishment "as Russia has in leading on satellites."

Mr. Heady made his remarks in discussing "Adjusting Agriculture to Growth Opportunities." He noted that individual farmers who are first to adopt new practices will continue to profit by being able to market their increased output before price levels drop.

"If a sufficiently vigorous research and educational program is developed in one state, its farmers may keep ahead of farmers in other states and gain income accordingly, in the same vein." He continued, "To slacken technological improvement in one state while it is carried forward rapidly in other states, would cause farmers in other states to gain income at the expense of farmers in the particular state."

That agricultural science is in danger of being overshadowed by current interest in missiles and physical sciences in general has been voiced by T. H. Fenske, associate dean of the University of Minnesota's Institute of Agriculture. "The biological sciences are just as important today as the physical sciences," he declared. "If science becomes lopsided, we can be in as much danger as we would be if we failed to keep pace with the Russians in guided missiles and other implements of war."

Mr. Fenske also pointed out that while research on ways to find new uses for farm products is important, it should not be allowed to completely crowd out production research.

"A thing that today is a mere idea in the mind of some young man working in plant or animal science may take 15 or 20 years to develop," he explained. "Certainly, we will need the information when that time comes."

Continuing on agricultural problems, Mr. Fenske said it is important to understand that industry needs markets provided by farmers and that farmers are more dependent than ever upon industry, business and professions. "We can be thankful," he said, "that we have had a high level of industry in the United States."

He suggested four main points to follow in handling agricultural problems:

"1. Continue agricultural research to reduce farm costs. This includes production, marketing and industrial research.

"2. The government must continue its efforts to reduce surplus to a manageable size.

"3. Help remove marginal farmers and marginal land from agriculture. This will not reduce surplus, but will make for a better living for a large group of people.

"4. The increasing population of this country is probably the long term solution to surpluses. In the last 10 years, 27 million people have been added to the United States, a 19% increase. In the next 10 years, 30 million people will be added, an increase of 18% over today."

All of these thoughts have a direct bearing on the welfare of the agricultural chemical industry in years to come. Continuing research and discovery of better ways to farm bring about efficiency, and this in turn demands the chemical products that cut unit costs and bring greater returns to the farmer.

Fertilizer studies have proved beyond doubt that the application of plant food reduces production costs, and that the investment repays the grower at a tremendous rate. By the same token, the application of pesticides, including control of insects, weeds and plant diseases, will be increasingly economical as the value of crops becomes greater.

Let's not allow Sputniks and outer space distract our attention entirely from the most important business of agriculture!

1958 Season Will Help Solve Big Farm Riddle

As the trend toward larger acreages increases, many in the farm supply field wonder what the net effect will be so far as the sale of pesticides, fertilizers, and other materials is concerned. Will fewer farmers purchase more materials, or will the decline in individuals on the land result in their using fewer tons of fertilizer, less insecticides and smaller amounts of weed killers?

It is a source of legitimate concern, for smaller farms are having a tough time supporting their owners satisfactorily in these times, and the trend is definitely for the larger units to take over the smaller ones, resulting in more efficiency. But will it result also in the sale of more chemical products as farms consolidate?

In many portions of the Midwest, larger farms are much in evidence, and they pay off for their owners. A study of earnings on some 149 farms in one Midwestern state showed that during a 10-year period (1945-54) every extra acre of cropland gave an $18 annual increase in labor earnings.

Naturally, earnings varied from farm to farm, but it is clear that bigger acreages under the management of fewer but better farmers can well result in the use of more fertilizers and pesticidal products.

The 1958 season, just getting under way in some parts of the country and still several weeks away in others, is going to be a partial answer to the question of how the larger-acreage farmers will regard the use of fertilizers and pesticides.

Croplife's Home Office

Croplife

BPA — *Member of Business Publications Audit*

NBP — *Member of National Business Publications*

CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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MEETING MEMOS

March 4-5—Western Cotton Production Conference, Hotel Cortez, El Paso, Texas, Conference Sponsored by the National Cotton Council and the Five State Cotton Growers Assn.

March 10—Fertilizer Dealers' Day, Chehalis, Wash., sponsored by the Pacific Northwest Plant Food Assn. in cooperation with Washington State College.

March 10-11—Central Midwest District Pest Control Meeting, Town House Hotel, Kansas City, Kansas, Robert R. Schendel, Schendel Pest Control, 1018 E. 6th St., Topeka, Kansas, General Chairman.

March 13-14—Oregon Feed & Seed Dealers Assn., Annual Convention, Multnomah Hotel, Portland, Ore.

March 18-19—South Dakota Weed & Pest Control Conference, City Auditorium, Miller, S.D.

March 18-20—Western Weed Conference, Hotel Davenport, Spokane, Wash.

March 20-21—Pest Control Operators Conference, Michigan State University, East Lansing, Mich.

March 25-28—Minnesota Seed & Fertilizer Dealer Meetings, Sponsored by the University of Minnesota; Gullickson's Cafe, Tracy, March 25; Porter Hotel, St. Peter, March 26; Hotel Albert, Albert Lea, March 27; Legion Hall, Winona, March 28.

March 26-28—North Central Branch Entomological Society of America, Annual Conference, Sheraton-Jefferson Hotel, St. Louis.

April 13-15—Sixth Annual California Fertilizer Conference, California State Polytechnic College, San Luis Obispo, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

April 17-19—California Hay, Grain & Feed Dealers Assn. Annual Convention, Ambassador Hotel, Los Angeles.

April 22 — Western Agricultural Chemicals Assn., Spring Meeting, Hotel Biltmore, Los Angeles; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

April 30 — Manufacturing Chemists' Assn. Precautionary Labeling Conference, Shamrock Hotel, Houston, Texas.

May 22-23—Soil Science Society of North Carolina, First Annual Meeting, Williams Hall, North Carolina State College, Raleigh, N.C.

June 9-11—Association of Southern Feed & Fertilizer Control Officials, Heart of Atlanta Motel, Atlanta, Ga., Bruce Poundstone, University of Kentucky, Lexington, Ky., Secretary-Treasurer.

June 15-18—National Plant Food Institute, Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 25-27—Pacific Branch, Entomological Society of America, San Diego, Cal.

July 8-10—Pacific Northwest Plant Food Assn., Ninth Annual Regional Fertilizer Conference, Pocatello, Idaho.

July 18-19—Southwest Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

Oct. 22-24—Pacific Northwest Plant Food Assn., Annual Meeting, Gearhart, Ore., Leon S. Jackson, P.O. Box 4623, Sellwood-Moreland Station, Portland, Ore., secretary.

Oct. 28-29—Northwest Garden Supply Trade Show, Masonic Temple, Portland, Ore.

Oct. 29-31—National Agricultural Chemicals Assn., 25th annual meeting, Bon Air Hotel, Augusta, Ga.

Nov. 9-11—California Fertilizer Assn., 35th Annual Convention, Ambassador Hotel, Los Angeles, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

Dec. 3-5—Agricultural Ammonia Institute, Annual Meeting, Morrison Hotel, Chicago, Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Jan. 20-22, 1959—California Weed Conference, Santa Barbara, Cal.

Mosquito Abatement Problem Under Study

SACRAMENTO, CAL.—Dr. R. L. Metcalf, chairman of the department of entomology, University of California, Riverside, told the annual conference of California Mosquito Abatement Districts that world health authorities are alarmed at the growing resistance of mosquitoes and other insects to DDT.

"The big problem," Dr. Metcalf said, "is what do we do next if DDT resistance becomes widespread? Where do we turn?"

He said that entomologists do not have the basic information to answer these questions. Studies now are under way by the World Health Organization to determine the nature of this resistance but there are only 12 laboratories in the world which can deal with the problem, he said.

"The WHO proposes to eradicate malaria from the earth," Dr. Metcalf said, "and it plans to spend $500 million to do this but it has become alarmed at the resistance to DDT and other insecticides."

ILLINOIS SOIL TESTS

URBANA, ILL.—Wet weather last spring reduced the amount of soil Illinois farmers tested during 1957. A. U. Thor, manager of the University of Illinois soil-testing laboratory, reports that tests were made on about 2 million acres compared with about 2.3 million acres in 1956.

Personnel Changes in California Department

SACRAMENTO—James W. Koehler, formerly district supervisor of rodent and weed control at the Los Angeles office of the California department of agriculture, has been appointed assistant chief of that bureau with headquarters in Sacramento.

Mr. Koehler will be succeeded in Los Angeles by Charles C. Siebe who has been associated with the seed inspection phase of the bureau of rodent and weed control for seven years.

New Implement Firms

YUBA CITY, CAL.—Formation of two new companies was announced by Milton and Larry Middleton of this city. The companies located in Williams and Woodland, Cal., will be known as the Middleton Implement Company of Williams, and the Middleton Implement Company of Woodland. Both companies will offer the sale and service of agricultural implements to the farmers and ranchers of the area, and will be retailing agricultural chemicals and feed equipment.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $11 per column inch.

All Want Ads cash with order.

SITUATIONS WANTED

SELLING FERTILIZER IN EASTERN Ohio, western Pennsylvania and part of West Virginia. Five years' sales work. Age 42. Farming at present time. Address Ad No. 3539, Croplife, Minneapolis 1, Minn.

FARM SUPPLY — AMBITIOUS, ENERgetic, well-rounded man wants connection in agricultural business. Good educational and practical background. Will invest. Address Ad No. 3548, Croplife, Minneapolis 1, Minn.

Croplife *Want Ads . . . Get Results*

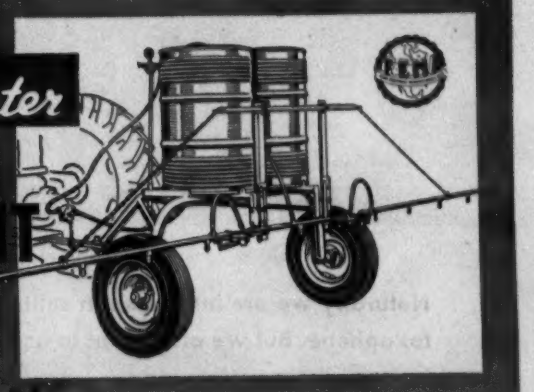
USE

Field Master

SPRAY EQUIPMENT

for

LOW COST APPLICATION of fertilizer—insecticides—weedicides.



Your biggest low-price sprayer value. High in quality—above the average in performance. Field Master Sprayers available as complete units or as separate kits: Trailer, Boom Assembly, Boomless Kit, Pump Box, Tank, etc. Write for Free Colorful Field Master brochure.

The Broyhill Company — Dakota City, Nebraska

CALENDAR FOR 1958-59

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How Hercules Helps Promote Your Service Facilities

Naturally we are interested in selling toxaphene. But we also want to assist in promoting the many unselfish service facilities now being provided by leading insecticide suppliers. That's one of the reasons why this year's Hercules advertising campaign is primarily devoted to a better understanding of insecticide usage.

More than one million farmers will be reading ads such as these in "Progressive Farmer," "Farm & Ranch," and other farm publications. In addition, local radio and television programs and the numerous dealer aids available from Hercules can help make you an even better friend of the customers you serve. It is our hope that Hercules' promotional activities will be of direct value to you.

Questions and Answers About Cotton Insecticide Usage

Q ***Is there a trend toward earlier planting?***

To some extent, but the important trend is toward early *production.*

Q ***Aren't early planting and early production the same thing?***

Not necessarily. For example, early control of insects can be a big step toward early production even if planting is done at what you consider the regular time.

Q ***Why is that?***

Anything that slows down the natural growth cycle of cotton interferes with early production. Early control of insect pests is essential to promote the vigorous, healthy growth of plants. That's why early control is an important part of any well planned insecticide program.

Q ***Is it true that the more insecticide I use the more efficient my control program will be?***

No. When you use toxaphene, for example, you will find that the most economical and efficient program is based on an intelligent use of the insecticide in recommended dosages. Excessive usage is uneconomical and unnecessary.

Q ***Does early production increase my profit?***

Many farmers have found that they get a better price for cotton that's produced early. Buyers appreciate that early cotton is clean, free from trash, and has better lint quality. But even more important, early production protects you from late-season insect pests.

Q ***Do I need help in planning my insect control program?***

Few farmers would claim to be entomological experts. You should seek the best help you can get.

Q ***Where can I get help?***

In addition to the usual sources, help is available from the best insecticide suppliers who are placing trained entomologists on their staffs to aid the farmer. Shop for this kind of service. Without it you are getting less than you are paying for in your insecticide purchases.

Q ***Is it possible to sum up the steps successful planters will be taking in 1958?***

The following, at least, will be part of their program: a *regular* insect control program with *real* guidance from the insecticide supplier; emphasis on *proper* use of insecticides; insistence on quality insecticide formulations; and a greater effort toward early production of cotton.

Presented in the interest of better insecticide usage by

Agricultural Chemicals Division

HERCULES POWDER COMPANY INCORPORATED

900 Market Street, Wilmington 99, Delaware

Manufacturers of technical toxaphene

NX58-4